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VOL. XII. NEW SERIES. No. 7.

JULY, 1903.

THE OPHTHALMIC RECORD

LII

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PUBLISHED ON THE FIFTEENTH OF THE MONTH.

SUBSCRIPTION RATES: IN THE UNITED STATES, CANADA, AND MEXICO, $4.00 PER ANNUM, IN ADVANCE. OTHER COUNTRIES OF THE POSTAL UNION, 18 SHILLINGS.
SINGLE COPIES 50 CENTS.

THE OPHTHALMIC RECORD,
THE HIGH BUILDING, CHICAGO, U. S. A.

Entered at the Chicago Post-Office as second-class matter. Rogers & Hall Co., Printers, Chicago.

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The August number of THE OPHTHALMIC RECORD will contain a Report of the Ophthalmic Section of the International Medical Congress; an original paper by A. J. Erwin, M. D., How Shall We Open the Capsule; one by Geo. Keiper, M. D., Complete Absorption; one by Alvin A. Hubbell, M. D., Interstitial Keratitis; one by Geo F. Suker, M. D., Concerning the Terms Antimetropic and Anisometropic, Etc. There will also appear Abstracts, Reviews, Society Reports and Personals and items of interest to the profession.

THE RECORD particularly desires short practical papers on any subject connected with Ophthalmology. These will be published at as early a date as possible. It is understood that, unless otherwise arranged, original articles, when accepted, are contributed to the RECORD exclusively. Illustrative cuts will be made at the expense of the journal, and proofs for correction will be sent to authors when desired. Reprints with covers will be furnished at cost. The RECORD will be issued monthly, and each number will contain about 54 pages of reading matter.

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103 E. Adams Street, CHICAGO.

Subscriptions and Advertisements should be sent to the Publisher, the High Building, Chicago, Ill., U. S. A.

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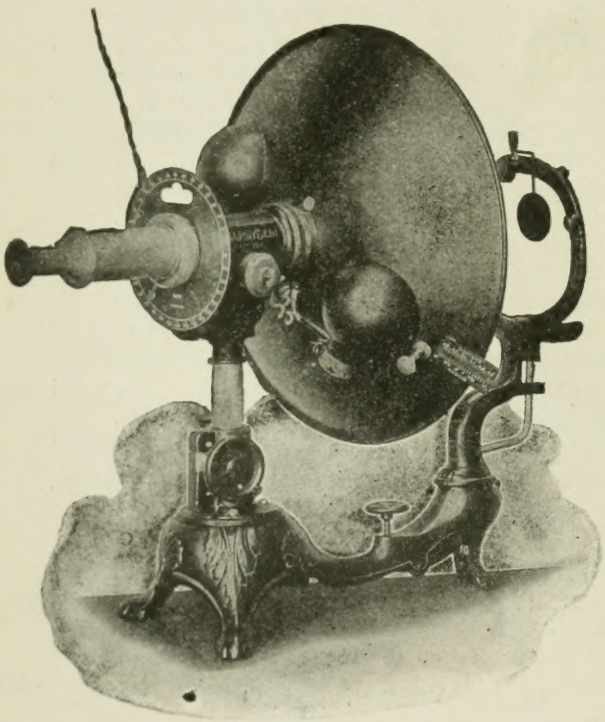

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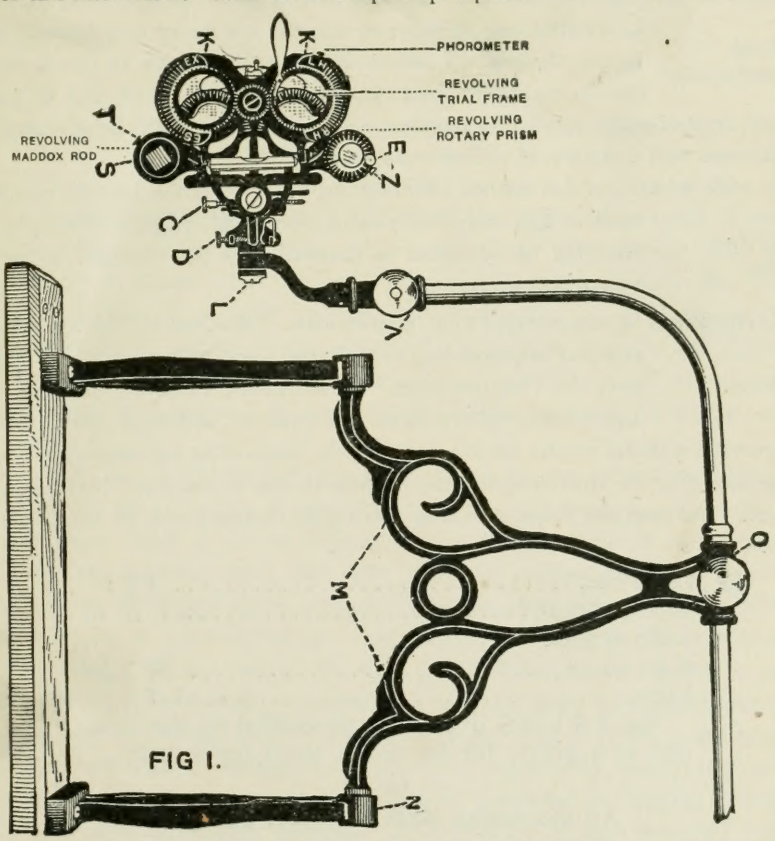

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THE
OPHTHALMIC RECORD

A MONTHLY REVIEW OF THE PROGRESS
OF OPHTHALMOLOGY.

VOLUME XII. No. 7. CHICAGO, JULY, 1903. NEW SERIES.

ORIGINAL ARTICLES.

THE RETINAL IMAGE.

BY CHARLES D. JONES, M. D.

Ophthalmic Clinical Assistant, Massachusetts Charitable Eye and Ear Infirmary; Ophthalmia Surgeon, Malden Hospital, Boston.

(Illustrated)

It may be accepted as a fact that the basis of correct vision is the formation on the retina of a well defined real image; that is, an image in focus. It is probable, also, to be more precise, that the image should be focused on the rods and cones; and as the total thickness of the retina in the region of the macula is about .33 m.m., the discrepancy between the anterior and posterior surfaces of the retina would, expressed in terms of refraction, amount to about one dioptre.

The size of the largest object which can be recognized as sharply defined in all its parts is remarkably small. Various experiments I have made limit it to an object with a visual angle of about one degree, say between forty and sixty minutes; corresponding, approximately, to an object three to four inches in diameter at twenty feet distant; or to only about six millimeters in diameter at one-third of a metre. All the rest of the field is indistinct, and so much so as, considering letters, to be illegible at the ordinary reading distance unless the letters are large. This also means that if every letter were scrutinized closely enough to identify it separately the eye would have to take about nine or ten different positions in reading across the ordinary newspaper column. As a matter of fact we read, not

*I give this number with considerable hesitation. I do not recall having seen any measurements of the retinal area which is useful for vision. From the nature of the problem perhaps no exact measurements are possible. The measurement given is probably near enough to show the approximate proportion; it was calculated from the chart of a normal field.

single letters but words whose forms have become so familiar to us through usage that a slight blurring is insufficient to disguise them. To consider, however, this small image at the macula the only part of the retinal image sharply defined would be an error; the blurring of the peripheral vision is due to a physiological cause, not a physical one; for it is impossible to produce by any correcting lens, an image more accurately defined on the periphery of the fundus than on the fovea. This condition, which one might judge a priori, would result in a seriously low degree of vision, proves in reality highly beneficial, allowing the mind to be concentrated on but few details at a time. It also suggests the vexed question as to the vision of birds and insects.

The average diameter of the fovea is about 25/100 millimeters; the retinal image which I have described would measure about 27/100 millimeters; that is, the sharply defined image corresponds closely to the area of the fovea. Finally as the total area of the retina capable of perceiving impressions may be considered as about 500* sq. millimeters and the area of the fovea about .07 sq. millimeters, only approximately 1/7000 of the retinal area is capable of fine work.

With these figures in mind let us consider the image produced by the 200-foot letter at a distance of 20 feet; or better, to simplify the matter as much as possible, a square of the same size. [In the following remarks no consideration is taken of the concavity of the retina, but the error of considering the retina a plane surface is so small that, except for theoretical results, it may be neglected: for in the case of an object with a visual angle as large as ten degrees (*i. e.*, a square

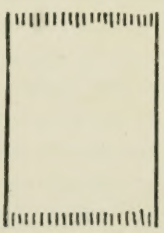

FIG. 1.

meter twenty feet distant) the difference in refraction between the concave and plane surfaces would, at the edges of the image, amount to only about one-seventh of a dioptre.] Upon the retina this object, which is about eighty-eight millimeters square, will project an image .22 millimeters square, or a square one of whose sides measures slightly

in excess of one-fifth of a millimeter. This seems a large letter to us. If an astigmatism with the rule exists the image will cease to be a square and become oblong. It now has the shape of Figure I., with the upper and lower edges blurred if the case is simple myopic astigmatism: with the vertical edges blurred if a case of simple hypermetropic astigmatism (No. II.).

FIG. 2.

In astigmatism against the rule the image is greater in its transverse dimension, as in Figures III. and IV. Number III. being myopic and Number IV. hypermetropic astigmatism

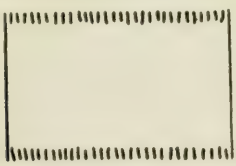

FIG. 3.

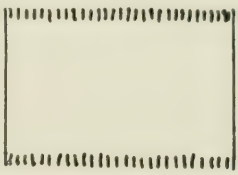

FIG. 4.

If the astigmatism be oblique an image resembling V. is produced, with the meridian of greatest refraction at, say, 75°; and the

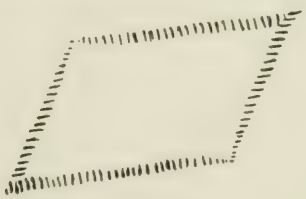

FIG. 5.

axis of the correcting cylinder being 75° or 165° according as a plus or minus lens is used. Blurring of the edges will occur at all parts except at two or more points. If in this case both eyes have the same astigmatism and the axes are as is usual, symmetrical, the

binocular image will resemble Figure VI. where the shaded portion only is common to both eyes, and the open parts exist as blurs, more or less dense.

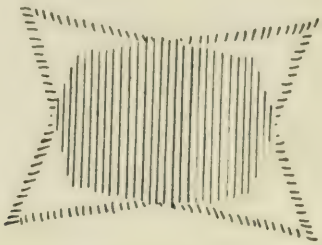

FIG. 6.

If the less common condition prevails and the axes are parallel, the form of Figure V. results. It is therefore probable that of all varieties of regular astigmatism, that with oblique, symmetrical axes produces the greatest degree of distortion of the image and consequently the highest defect in the vision.

From these figures one comprehends how small the retinal images are; and the demonstration is still more striking when we consider small objects. The normal eye can discern a letter nine millimeters square twenty feet distant (V = 20/20). Many can recognize a letter seven millimeters square (V = 20/15) and some can do even better than this. The image of the seven millimeter letter is only .0175 millimeter square. Moreover the normal eye can readily perceive a dot one millimeter square twenty feet distant and this means an image only .0025 millimeters square, or less than one-half the diameter of a red blood corpuscle. The subject of these small images is an exceedingly interesting one, but is merely referred to here as the writer can present nothing not already readily accessible.

SARCOMA OF THE CHOROID IN A CHILD.*

BY WILLIAM EVANS BRUNER, A. M., M. D.

CLEVELAND, OHIO.

(Illustrated.)

H. B., age five years eleven months, was brought to see me April 3, 1901, with the following history: The paternal grandmother is said to have died from cancer of the uterus. The father's health has always been good except for chronic rheumatism. The mother has always been well until two years ago, when she had some gastric disturbance from which she has fully recovered. They have had thirteen children, all of whom are living except two. One was killed in the Spanish-American War. The cause of death of the other child is not known. The oldest is twenty-eight years of age and the youngest two years. There has been no eye trouble in the family.

This little girl, though never very strong, has usually enjoyed good health. In December, 1898, she had a mild attack of scarlet fever, and associated with it a suppurating adenitis on the right side of the neck. The abscess was opened and healing was prompt. Nothing wrong was noticed with the eyes until about three or four months after the scarlet fever or about two years before I first saw her, and there is no history of any injury to the eye at any time. About two years ago the mother first noticed a small spot in the right eye—a small yellowish reflex in the pupil. This slowly grew larger and about six months later the sight began to fail. About December, 1899, or January, 1900, she began rather suddenly to have pain in the eye. The mother then took her to a physician in Akron who pronounced it a glioma and advised enucleation. She declined to have anything done. At times there would be no pain, then again it would become red and painful and the lids would be slightly swollen. When she "took cold" as the mother expressed it, the "cold" would always settle in the eye. These attacks would recur every two or three months and last several days. Her general health was rather poor when she began having these attacks of pain in the eye, but this improved with tonics. The mother later took the little girl to another physician in Akron who prescribed internal and local treatment and told her that the eye would get well in six months. About November, 1900, she first noticed that the pupil was becoming larger. In January, 1901, the eye became worse. The lids were swollen, the eye ball red and

*Read before the Section of Ophthalmology of Cleveland Academy of Medicine, May 29, 1903.

very painful. About two months before I saw her, the mother brought the little patient to Cleveland to see an oculist. He advised against enucleation, gave her a lotion and told her that the eye would shrink but was not likely to give any further trouble. In conversation with me afterward he said the eye was blind and presented all the appearances of a subsiding panophthalmitis with tension —3. There was no improvement. About a month later the eye began to protrude and shortly afterward the lids became red and swollen. Recently she has had a great deal of pain, no appetite and has not slept well.

Her present condition is well shown in the accompanying photograph. Proptosis is marked. The ball is pushed almost directly forward and is immobile. The upper lid is much swollen and dusky red in color. Considerable effort is required to separate the lids. There is slight bulbar edema in the palpepral fissure. The cornea is only very faintly hazy. The anterior chamber is very shallow or almost obliterated and the pupil is filled with lymph. Tension is +1. The child is apathetic and evidently in pain. Temperature is slightly above normal. Enucleation, or more probably exenteration was advised, though the mother was told that the growth would almost certainly recur locally or elsewhere. The operation would relieve the child of pain and probably would somewhat prolong life.

April 5 under ether anesthesia the eye ball was enucleated. All the surrounding tissues were found adherent to the ball and the sclera was involved. A large mass could be felt filling up the posterior portion of the orbit. Complete exenteration of all of the contents of the orbit was then performed. The periosteum was removed and trimmed off as closely as possible to the apex of the orbit. The bone appeared healthy. The cavity was then packed with iodoform gauze. She slept much better that night than for a long time and the following morning was feeling very comfortable. After several days we began removing a little of the packing each day until the sixth day when all of it was removed and the cavity freely syringed with boric acid solution.

April 23.—The bandage and all packing were discontinued and a small patch substituted. The socket was perfectly clean and the bone covered by normal looking tissue. The following day, April 24, the mother drew our attention to a swelling on the head, which she had noticed the preceding day. A well defined small elevation was found, evidently in the bone itself, situated to the left of the median line just in front of the coronal suture. There was no pain nor tenderness about it. The temperature was normal in the morning and 99°

SARCOMA OF THE CHOROID IN A CHILD.

in the evening. Evidently this was the beginning of a metastatic growth in the left frontal bone. April 26, three weeks after the operation, the little patient left for home. The orbit was perfectly clean and gave no indication as yet of any recurrence. She was looking much better and brighter and had a good appetite. The mother was told of the probable nature of the swelling on the head and was asked to report soon in regard to the child's condition and if possible to bring her to Cleveland again if this growth should become larger or there should be recurrence locally or metastasis anywhere. A letter was also sent to the family physician. As I heard nothing from him I wrote him several more letters without getting any response and finally I wrote the mother. She informed me that the tumor on the child's head grew to the size of a large coffee cup, and another developed on her jaw. She could not close her mouth and for a long time before her death could not talk so as to be understood. She became unable to chew any solid food and could take only liquid nourishment. She suffered much pain and died August 5, just four months after the operation. The eye ball and contents of the orbit were given to Dr. W. T. Howard, Jr., who examined them and pronounced the growth a sarcoma.

There was, of course, nothing unusual in the operation for this case and the final result was merely what was expected. The point of interest pertains to the diagnosis as based upon the clinical course and as determined by examination of the specimen.

Würdeman, writing in Posey's text book on diseases of the eye, one of the latest books published, states that "Sarcoma is extremely rare in children, so that a malignant growth developing in an eye ball would in all probability be regarded as a glioma in a child and a sarcoma in an adult." Fuchs says sarcoma is extremely rare in childhood. "This gives a means of distinguishing it from gliomata which spring from the retina and which in part present symptoms like those of sarcomata but which occur in children exclusively. A malignant neoplasm developing in the eye ball will therefore have to be regarded in all probability as a glioma in a child and as a sarcoma in an adult." Only eleven out of two hundred and fifty-nine cases of sarcoma collected by Fuchs occurred before the age of ten (Berry). Marshal in the Royal London Ophthalmic Hospital Reports, Vol. 15, Part 1, 1899, reports fifty-eight cases of sarcoma of the choroid seen between December, 1891, and the date of his report. The youngest patient was twenty-eight years old. Griffith, in Norris and Oliver's System of Diseases of the Eye, gives the age of sarcoma from twenty years, or

even less, to old age. deSchweinitz in his text book says that "sarcoma of the choroid is differentiated from glioma by the fact that the former usually occurs at a later period of life." Glioma, on the other hand, is sometimes congenital, usually occurs before the third year, but rarely as late as the eleventh or twelfth year. Marshal, in the Royal London Ophthalmic Hospital Reports, Vol. XIV, reports forty-three undoubted cases of glioma of the retina which had been examined in the laboratory. Of these fifteen were detected before the first year, twelve between the first and second, eight between the second and third, four between the third and fourth, two between the fourth and fifth and one between the sixth and seventh. Schöble, in Norris and Oliver's System, says most of the cases occur between the first and third years, and most or all of the authorities agree with him. In our little patient the grayish reflex from the fundus was first noticed when she was about four years old, and she was about six years old when we first saw her. The age in our patient would therefore correspond to that of glioma. Several years previously, however, in 1898, I saw a little girl two years of age at the dispensary in whose eye something abnormal had been noticed a year previously, or when she was only one year old. The appearance at the time of her visit was typical of the so-called "amaurotic cat's eye" and glioma of the retina was diagnosed. The eye was enucleated and examination in the laboratory showed it to be an angio-sarcoma of the choroid originating from the central artery of the retina. Age, therefore, is an uncertain element in making a diagnosis.

The glioma "resembles closely in its structure a round cell sarcoma, so much so," says Berry, "that they are by some considered to be identical." Most text books speak of them as distinct diseases. Since Virchow almost all modern investigators except Klebs have accepted the fact that gliomata start from the supporting fibers of the retina, and they may therefore start from any of the layers except the rods and cones. Some workers have doubted whether glioma is independent of and different from sarcoma. Schöble thinks they are distinct. "Not a single observer has found a glioma starting from a retinal blood vessel. With sarcoma this is not rare." This was true in the one case mentioned above. In my own patient it was impossible to tell at the stage when the eye was examined where the tumor had originated. The glioma may become mixed in type, or as Schöble says, "it seems evident that as the tumor comes in contact with different tissues, it may induce in them severally a hyperplasia characteristic of their own structure. As glioma spreads into the choroid and sclera the cells

assume the character of a small, round celled sarcoma. True sarcomata of the retina are of a secondary nature coming from the choroid and propagated into the retina." It would seem, therefore, that the two are in reality identical, as some authorities have asserted, or else there is a great deal of confusion in distinguishing between them, and many are being wrongly diagnosed. Clinically there are supposed to be other points of difference between them; but, if there is a difference, it evidently cannot be positively determined clinically and can be determined only by microscopical examination of the specimen.

In our patient the eye was interesting because of the stage it passed through in which it resembled an old case of panophthalmitis, and was so diagnosed, while previously it had evidently presented the clinical symptoms of the first stage of glioma. Virchow believed that the shrinking of the eye in these rare cases of glioma is due to a high grade regressive metamorphosis and absorption of the fluid contents, while Von Graefe considered them due to inflammatory processes in the uveal tract, as an iridocyclitis or subacute or chronic panophthalmitis. Schöble inclines to the opinion that both factors are active. He calls such a growth a cryptoglioma and believes it is impossible in some of these cases to make a correct diagnosis. Von Graefe mentioned some points to aid in the recognition of glioma in a shrunken eye ball—the shape and painfulness of the stump. These are mentioned in many text books but they seem very uncertain and unreliable. Sarcoma may also occur in shrunken or phthisical eye balls, or rather may at times cause phthisis bulbi, and at times simulates chronic iritis, as in the case reported by Griffith in the Ophthalmic Review, December, 1891. The process by which this is brought about is the same as in glioma and there is also the same impossibility of positive diagnosis. I recall such a case reported a few years ago at the Cleveland Medical Society by Dr. Aldrich, I think. The patient died of sarcoma of the liver metastatic from an old shrunken eye which had been entirely unsuspected of containing such a growth.

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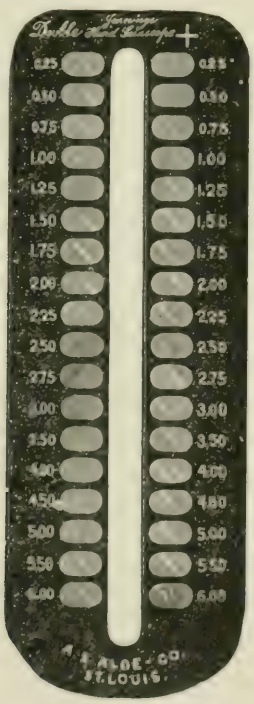
BY J. E. JENNINGS, M. D.,

Author of "Ophthalmoscopy," Ophthalmic and Aural Surgeon to the "Frisco System," etc. etc

ST. LOUIS, MO.

(Illustrated.)

In 1896 I designed and introduced to the profession a skiascope consisting of thirty-nine lenses revolving in an upright frame with a recording disc, etc., mounted on an adjustable stand. This skiascope has been in constant use up to the present and has proven of inestimable service in saving time and fatigue in retinoscopic work. For those who do not care to have such an elaborate and expensive instru-



ment, or who have no space in their office for its accommodation, I wish to present my "Double Hand Skiascope." It consists of two aluminum frames, one holding eighteen pairs of convex lenses and the other eighteen pairs of concave lenses. Each frame is 19¼ inches long and 6¾ inches wide, with an opening 17x1 inch down the middle to accommodate the nose when the skiascope is held in position.

The lenses are 1¼ x ¾ inch and so placed that it is possible to examine patients with pupillary distances ranging from forty-five to eighty-five mm. The strength of the various lenses are as follows: 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25, 2.50, 2.75, 3.00, 3.50, 4.00, 4.50, 5.00, 5.50, 6.00. Instead of a handle at the bottom, as in other hand skiascopes, the metal frame extends at the sides 1½ inches beyond the lenses, making a convenient hand rail with which to hold the instrument in position. The space at the bottom usually occupied by a handle is utilized for an additional number of lenses.

In using the skiascope the frame containing the convex or concave lenses, according to the case, is held firmly in both hands by the broad edges, with nose through the opening and eyes accurately centered behind the upper or weakest pair of lenses. After each eye is tested, the patient shifts the instrument up until he looks through the next stronger pair of lenses, and so on until the examination is completed.

The essential advantages of the "Double Hand Skiascope" are as follows:

1. Both eyes may be examined before moving the instrument.

2. The skiascope rests against the forehead, sides of the nose, lips and chin so that the lenses are as accurately centered as is possible with the best fitting trial frame.

3. This accuracy is further assured by the instrument being held at the side with both hands.

4. The space usually occupied for a handle is utilized for an additional number of lenses.

5. It has more than twice the number of lenses found in any other hand skiascope.

6. The shape and position of the lenses adapts it for use with children as well as grown patients; the pupillary distances ranging from forty-five to eighty-five mm.

The "Double Hand Skiascope" is made by the A. S. Aloe Company, St. Louis.

A PRISM-SEQUENCE FOR MEASURING HETEROPHORIA.*

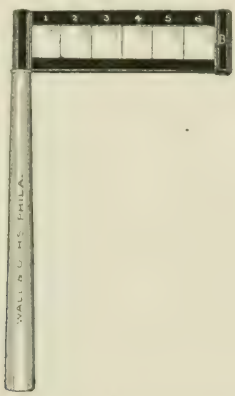
BY WALTER L. PYLE, M. D.,

Assistant Surgeon to Wills Eye Hospital.

PHILADELPHIA, PA.

(Illustrated.)

Unless one uses the phorometer or optometer with a rotary prism, the selection from the test case of the appropriate correcting prisms in the measurement of heterophoria necessitates considerable loss of time. I have found the small prism-sequence herein described a great convenience and aid to rapid work. It may be used in conjunction with the Maddox rod, the red glass, or the prism diplopia-test.



The instrument consists of a frame two and one-half inches long, and five-eighths inch wide, containing six small prisms, each three-eighths inch square, arranged bases out, beginning at the left as follows: 1°, 2°, 3°, 4°, 5°, 6°. The figures denoting the strength of each prismatic square are inscribed in white on both sides of the black frame. The handle may be screwed into either end of the frame, but is usually placed on the right end, near the 6° prism. The name of the instrument or the maker's name is placed on the front of the instrument, and the letter B is stamped in white on the frame to denote the base of the prisms.

In making tests for heterophoria, it is common to place the Maddox rod before the left eye. In such case, if the light-streak is seen to the left, as is commonly the case, the instrument is moved to

*Presented at a meeting of the American Ophthalmological Society at Washington, D. C., May 13, 1903.

the patient's right, carrying the handle toward the patient's nose until the streak exactly bisects the light. In cases of hyperphoria, the prism-scale is moved up or down, as the defect requires. In measuring exophoria with the rod before the left eye, the instrument is reversed by a complete turn of the handle and brought before the left eye from the patient's right; or the handle may be screwed into the left end of the frame, adjoining the 1° prism, making a sequence with bases in, and then carried towards the patient's left, away from the nose.

I am indebted to Messrs. Wall & Ochs, opticians, of Philadelphia, for the manufacture of the instrument..

SLIGHT MODIFICATIONS OF THE VAN MILLINGEN AND OF THE HOTZ-ANAGNOSTAKIS OPERATIONS FOR ENTROPIUM.

BY HAROLD GIFFORD, M. D.,

OMAHA, NEB.

(Illustrated.)

As for the last sixteen years I have been doing something like fifty entropium operations a year, the results of my experience may be of some interest to the younger readers of THE RECORD. I speak of operations for entropium since this is customary, although as a matter of fact the entropium is not what is operated for, but the trichiasis which the entropium causes. Although some observers claim that the entropium itself does harm to the cornea, I have never seen any evidence of this unless lashes were turned in so as to touch it. In marked entropium of the upper lid and nearly all cases where the lower lid has been affected, I have for years relied almost entirely on the Van Millingen operation, which, in brief, consists in splitting the margin of the lid and introducing a strip of lip membrane into the gap. After no other operation do I feel so positive that the patient will not be bothered again by ingrowing lashes as after a successful operation of this kind. The only reasons which I can advance for the comparative unpopularity of this operation are: 1st, the difficulty of making the cut in the lip margin gap widely enough; 2nd, the tendency to put in too short a flap, the temptation not to extend the cut into portions of the lid where no lashes are turning in being too great to be resisted except after considerable experience. To obviate the first difficulty, instead of introducing the sutures intended to make the incision gap, in the way recommended by Van Millingen

(namely, first through the edge of the lid, then through the skin high up toward the brow, which generally everts the whole lid instead of widening the cut), I have put the sutures, three or four in number, first through the margin of the lid, immediately external to the incision, then through a narrow fold of the loose skin of the lid about three-sixteenths of an inch above (or in the case of the lower lid, below) the lashes. A bit of absorbent cotton, wet in sterilized boracic solution, is then made into a firm roll about one-eighth inch in diameter and one and one-half in length and is tucked under the free portions of the sutures so that when the latter are tightened the roll is pressed down into the tissues just above the edge of the tarsus, thus everting the outer margin of the tarsal incision without everting the

lid as a whole. Before tightening each knot it is well, while the ends of the thread are held with one hand, to push the roll of cotton firmly against the tissue with a pair of forceps so that the eversion may be accomplished with the least possible strain on the sutures; the incision also gaps more easily if, just before tying the knots, it is reopened by running some blunt instrument along its bottom from one end to the other. The lid is then protected from infection by a moist pad of cotton while the lip flap is excised. For this excision a larger clamp than the ordinary Demarres is desirable. The open space within the fenestrum should be at least an inch and a half in its longest diameter in order to obtain a long enough flap for some lids without loosening and resetting it. The lip flap should be nearly one-eighth inch wide and should have the sub-mucous tissue trimmed off, but care should be taken not to make it too thin or it will not hold the edges of the cut apart after the stitches are taken out. Sutures to hold this flap in position are not necessary if it is carefully pressed down into the cut with moist forceps or a moist swab and a suitable dressing applied. For this purpose I generally first apply a thin sheet of wet

absorbent cotton thickly smeared with sterile white vaseline upon which iodoform is finely powdered. This is laid on the outer surface of the operated lid and the edge tucked over the flap so as to lie between it and the edge of opposing lid when the lids are closed. Over this more wet cotton is laid, then gutta percha tissue, then more cotton fastened at the edges with collodion, and a very carefully applied bandage, which is generally not changed for three to five days. After the fifth day the bandage can generally be left off, but for several days thereafter it is well to apply white vaseline to the edges of the lids several times a day to keep the flap from getting dry. I think it unadvisable to operate upon both lids of the same eye at one sitting unless the circumstances are unusually urgent Where the result is not perfect the failure is hardly ever due to necrosis of the flap, but to the incision having been made either too far in or too far out or not long enough. In deciding just where to make the incision the utmost care must be taken to leave all the hair bulgs in the outer flap, since if, after the flap heals in, any lashes appear between it and the globe they are very difficult to deal with; but in striving to avoid this, if the cut is made too far in, the inner flap is so thin that it is difficult to obtain a proper gaping of the incision. Where the lid has been turned in for a long time it is very difficult to determine the proper limits of the ciliary border, but by careful inspection the openings of the Meibomian glands can generally be seen, and if the incision hugs these closely and is directed toward the middle of the antero-posterior thickness of the lid, mistakes will seldom occur. Where only a portion of the lid is turned in, there is a great temptation to limit the incision of the lid to this portion, but this is generally a mistake, since it often happens, after the affected lashes are turned out, that others just outside of the portion affected by the flap, turn in and touch the cornea. The incision should extend well beyond the inverted portions of the lid and except where the trichiasis is confined to the center of the lid, the cut should go well out into the skin at each extremity of the tarsus.

This splint stitch for the Van Millingen operation was, I think, first described by me in 1892, (Am. Journal of Ophthal.), but at almost the same time a Russian whose name I unfortunately have lost, described it independently, and it has later been described by Wolters (Abst. in Supplement to Arch. für Augenheilk, XXXIV., p. 147). The plan of introducing a lip flap into a Von Bürow incision on the inner surface of the tarsus, was also described by me in 1892, and has since been recommended by Maher (Archives of Ophthal., July, 1897),

but I have practically abandoned this plan, used by itself, since I find that the same amount of lip has not nearly as much effect upon the eversion of the lashes when introduced into the inner surface of the tarsus, as it has when introduced into the margin of the lid.

A MODIFIED HOTZ-ANAGNOSTAKIS OPERATION.

For some years in doing the Hotz operation, (which I use for the lower grades of entropium) after getting the sutures in place, I have, before tying them, everted the tarsus and made an incision through its entire thickness from end to end, not more than 3 m.m. from the lid margin. After this, when the sutures are tied their effect is distinctly greater than without the Von Bürow incision. This of course makes a combination very similar to Green's operation, but the principle of the Hotz operation is so important that the two should not be confused.

One disadvantage of the Hotz stitch, as applied to cases in which lashes at the extremities of the lids turn in, is that the tarsus is here so narrow that it is often impossible, if the stitches are put straight through, to get sufficient purchase on it to turn the lashes out; and to overcome this difficulty I have made the sutures at the extremities of the lids take a zigzag course, as in Fig. 1; this produces a slight temporary puckering of the skin, but the effect of such a stitch on the eversion of the tarsal edge is manifestly greater than where the thread is put through in a straight line.

I also believe it is well to excise a very narrow strip of skin with the orbicularis fibres and, as recommended particularly by Schnabel, I make the incision not more than one-eighth inch from the lashes in the center and rather less than this at the extremities.

One objection to these operations and all others that I have seen tried for entropium, is that when done during the latter stages of trachoma, slight ulcerations of the cornea occasionally develop under the bandage, after the third or fourth day. These usually are of no consequence, but in three of my cases the ulceration has been so serious as to leave some slight impairment of vision; so that in spite of my fondness for these operations, if I could find another equally effective which would not be open to the same charge I should be glad to adopt it.

A CASE OF SYPHILITIC ORBITAL PERIOSTITIS AND OPTIC NEURITIS IN WHICH VISION WAS ALMOST EXTINGUISHED BUT COMPLETELY RESTORED.

BY F. C. HOTZ, M. D.,

CHICAGO.

On March 19, 1902, Mr. K., forty-nine years old, consulted me on account of rapid failure of vision. He had never had any serious illness, but twenty years ago had a chancre, for which he received constitutional treatment at the time, and, as he claimed, never had any secondary manifestations. During the past six weeks he suffered almost continuously from frontal headache, which was especially severe at night. One week ago the vision of the right eye became impaired and since two days the left eye had also been failing very rapidly.

Examination.—Vision of R. E. reduced to counting fingers at six inches. The inferior nasal quadrant of field gone; pupil medium wide and but feebly responding to light; disk swollen, grayish red, its contours blurred, the veins dilated and tortuous; the eye ball rather prominent and back pressure on globe painful. L. E. fingers at ten feet, inferior nasal quadrant of field gone, tension normal; pupil active; disk very red, its nasal margin fairly well defined, temporal half swollen and blurred; veins dilated. Eye ball even more protruding than the left eye and back pressure very painful.

Treatment.—Artificial leech to each temple, ice bladder on head, inunction of half an ounce every morning and evening, and potassium iodide, 10 grs., three times daily to be increased by five grains every day.

March 24. Less headache, R. E. less prominent, fingers at six feet, disk less swollen and no pain on back pressure. L. E. still protruding and back pressure painful; vision reduced to perception of light in the central area of the field; whole disk swollen and cloudy; veins very large and tortuous.

March 31. No headache, R. E. not prominent, fingers at eight feet and perception in inferior nasal quadrant restored; disk of normal size, still grayish red, veins smaller and less tortuous. L. E. less prominent and no pain on back pressure; perception restored in temporal field; disk less swollen.

April 10. R. E. fingers twelve feet, disk of normal size and appearance and veins of normal caliber. L. E. fingers at two feet and

perception in all parts of the field; disk still slightly blurred but veins of normal size. He is taking 120 grs. of K. I. pro dosi.

From this time on he improved very fast so that at the end of April both eyes showed normal ophthalmoscopic appearance with vision of R. E. 20/20 and L. E. 20/30. Inunctions and K. I. were discontinued and hydrarg. prot. gr. ¼, was ordered.

May 14, both eyes showed V 20/20, normal field of vision, normal fundi, and the same condition was found in November, when the patient called to have his reading glasses refitted.

Remarks.—The rapid course of the disease from start to finish justifies, I believe, the opinion that we had to deal with a rapidly progressive inflammatory process, and not with a slowly growing tumor. This opinion is supported by the ophthalmoscopic findings at the first examination, which in the L. E. showed the active hyperaemia of inflammation, not the passive congestion of choked disk. The question now arises whether the inflammation was intracranial or orbital. We know that syphilitic inflammation selects within the skull preferably two locations: the space bounded anteriorly by the chiasma and laterally by the optic tracts, and the pedunculi cerebri; and secondly the space in front of the chiasma between the optic nerves. In either case the optic nerves are involved and optic neuritis results. If the inflammation occurs in the space between the optic tracts it invades first and chiefly that portion of each tract containing the nerve fibres which cross in the chiasma and supply the nasal half of each retina; and therefore, as Uhthoff* has shown, temporal hemianopsia is the ruling symptom under these circumstances. If the inflammation occupies the space in front of the chiasma and invades the optic nerve it most likely affects the papillomacular bundles which near the chiasma are situated quite peripherally, and therefore a central scotoma is the usual visual disturbance observed under these circumstances. But in our case there were neither central scotoma nor temporal hemianopsia; central perception was never entirely extinguished and the chief disturbance of the peripheral vision was in the nasal field. While these facts made it very improbable that we had to deal with an intracranial lesion, there was the exophthalmus and the pain on pressure upon the globe, which symptoms could not be explained at all by an intracranial lesion, but pointed unmistakably to the orbit as the seat of the patologic process which, in my opinion, was a periostitis along the orbital roof. Syphilitic orbital periostitis is known to produce violent periorbital pain with marked nightly ex-

*Graefe's Archiv. xxxix.

acerbations, and to lead to swelling and hyperplasia of the orbital tissues. It is plain that under such conditions the eye ball is pushed forward, that the orbital tissues are sensitive to pressure and that the inflammation reaching the optic foramen will rapidly and seriously impair the function of the optic nerve and produce the intraocular signs of optic neuritis.

A very interesting feature is the symmetrical appearance of the periostitis in both orbits. Cases of symmetrical syphilitic affections in the orbit have been reported by Schott, Alexander and Goldzieher. In all cases the affection started as periostitis of the orbital roof and sooner or later developed a tumor which could be felt between the orbital roof and eye ball. In one of Goldzieher's cases the tumors were taken for fibrosarcoma and extirpated; it was found the tumors were not enclosed in a capsule but gradually tapered off towards the apex of the orbit, where they resolved themselves into numerous strands radiating into the orbital tissue. This patient died and the post-mortem examination disclosed extensive syphilitic lesions in the orbits and other parts. Goldzieher is of the opinion that symmetrical affections of both orbits with exophthalmus and periorbital pain justify the suspicion of syphilis, and I believe in our case the periostitis would have produced such symmetrical tumors, but this serious result and the destruction of the optic nerves was obviated by the early and energetic treatment.

TUBERCULOSIS OF THE IRIS, WITH PRESENTATION OF MICROSCOPIC SPECIMENS.*

BY WM. H. WILDER, M. D.,

Assistant Professor of Ophthalmology, Rush Medical College (in affiliation with the University of Chicago); Professor of Ophthalmology, Chicago Polyclinic; Surgeon to the Illinois Charitable Eye and Ear Infirmary.

CHICAGO.

Some difference of opinion seems to exist as to the frequency of this disease. Wagner (Münch. Med. Wochenschr., 1891, Nos. 15 and 16) states that fifty per cent of all cases or iritis are of this character. Michel (Lehrbuch der Augenheilkunde) also regards it as very common, and states that forty or fifty of every hundred cases of iritis are tuberculous. Both authors seem to include in their category all cases of serous iritis in which there are small masses of exudate in or upon the iris, that simulate in any manner tuberculous nodules. Horner

* Read at the meeting of the Academy of Ophthalmology and Oto-Larnygology, at Indianapolis, April 9, 1903.

estimates that it will not be observed more frequently than once in four thousand cases of eye diseases, while Hirschberg, of Berlin, saw only six cases of it among sixty thousand eye cases.

Velhagen (Klin. Monatsbl. f. Augenh., xxxii., p. 121) says that among eight thousand patients in the Eye Clinic at Göttingen, no case of tuberculous iritis was seen. With these latter opinions, I think most ophthalmologists will agree, and we must conclude, therefore, that it is a rare affection. Probably early observers who had opportunity for examining such cases, considered them as either condylomata or sarcomata, or placed them in the category of idiopathic iritis; but with the invention of the ophthalmoscope and the discovery that tubercles develop in the choroid in connection with either general or meningeal tuberculosis, a more careful study of certain inflammations of the iris and ciliary body has determined their exact nature. Cohnheim demonstrated that tuberculous iritis can be caused by introducing particles from tuberculous lymphatic glands, granulations of tuberculous joints, etc., into the anterior chamber of the eye. More recently investigators have caused the disease experimentally by injecting pure cultures of the tubercle bacilli into the aqueous chamber. The introduction of small masses of suspected tissue into the anterior chamber of the eye of a rabbit is employed as a means of determining whether such tissue is tuberculous. About twenty or thirty days after the injection into the eye, small, reddish grey nodules make their appearance in the iris, and the eye becomes inflamed. The nodules increase in number, coalesce, and fill the anterior chamber with a mass of new tissue. The cornea becomes involved and the growth breaks through, thus destroying the eye. The animal usually dies from general tuberculosis.

Tuberculosis of the iris manifests itself in three forms:

1st. Solitary tubercle.

2nd. Disseminated tubercle.

3rd. Simple, inflammatory tuberculous iritis (Michel).

The solitary growth affects one eye alone and develops as a small, round or oval nodule, usually at the periphery of the lower part of the iris. It is grayish red in color, and as it grows, it fills the anterior chamber of the eye, and much resembles a neoplasm. Indeed such a mass may easily be taken for a sarcoma. This also goes by the name of granuloma, a term, according to Fuchs, that was given by von Graefe, "because Virchow, who made the anatomical examination of the tumor, designated it as granulation tissue." This term should be abandoned, for it is misleading, and liable to create confusion. As the

growth increases, the cornea becomes involved and perforates, allowing the mass to break through, which presents as a pale yellowish or grayish mass similar in appearance to granulation tissue. It does not then continue to grow, but breaks down, and the eyeball gradually begins to shrink as the inflammatory process occasioned by the growth subsides. The eye is, of course, lost and phthisis bulbi ensues. General tuberculous infection may result.

In the disseminated form which may occur in one or in both eyes, there are at first all the symptoms and signs of an iritis. Soon little, yellowish grey nodules surrounded by a slightly reddened zone, appear in the iris. These vary in size according to the stage of the growth, but are from one to six m.m. in diameter. Their favorite site is at the root or periphery of the iris, and they seem to be constantly changing, some disappearing while others are forming. Their predilection for the outer or root zone of the iris helps to distinguish them from the condylomatous nodules, so frequent in syphilitic iritis that usually are seen at the pupillary margin. Greef describes them as of the size of millet seed, distributed over the iris, especially over its lower half and some distance from the pupillary margin on the circulus arteriosis minor. Some of these tubercles may disappear completely, leaving small patches of atrophied iris, while others may coalesce, forming larger tuberculous masses that fill in the angle of the anterior chamber.

The iris is dull and discolored, and flakes of lymph and disintegrated tuberculous nodules may fill in and occlude the pupil. Firm and extensive adhesions form between the iris and the lens and the tension of the eye may become markedly increased. Lubrowski (Archives Ophthalmology, Vol. XXIX., No. 3) reports several cases in which glaucoma supervened. Ciliary injection is marked and the eye is very often sensitive to pressure. The ciliary body and choroid may be invaded, and even the cornea may be involved, the tubercles presenting the same general appearances in that structure as in the iris.

As the case progresses, there may be bulging of the ciliary region and even perforation; or the process may subside with gradual shrinking and atrophy of the eye ball. Tubercular meningitis or general tuberculosis may supervene, so that the prognosis, both general and local, is bad.

In the third form, according to Michel, the tubercles are not clinically demonstrable, being situated in the tissue of the iris and not on the surface. The disease assumes the form of a chronic iritis or irido-cyclitis, which causes either complete annular posterior synechia

of the iris, or adhesion of its posterior surface to the lens. In the former, there would be iris bombé and more or less atrophy of the tissue of the iris. In the latter form there is a proliferating inflammation of the iris which becomes hypertrophied, and granulation tissue fills the posterior chamber. The tuberculous nature of the trouble may be demonstrated by excising a piece of the iris, and examining it microscopically for the existence of tubercle. Deposits of lime are frequently found in such irides, and even true bone formation has been observed as in the choroid.

Some observers, Leber (Bericht der XXI. Versammlung d. Ophthalmol. Gesellsch., Heidelberg, 1891), Samelsohn (Bericht der XXIII. Versammlung der Ophthalmolog. Gesellsch., Heidelberg, 1893), and Van Duyse (Archiv. d'Ophthalmologie XII., p. 478), describe a form of attenuated tuberculous iritis, presenting all the salient features of the disseminated form, which may end in spontaneous recovery, the functions of the eye being partly or wholly preserved. This form is slower in its course and affects older persons.

All of the forms mentioned present the same histological features, differing in degree, namely the typical tubercle formation of round cells around a central giant cell. This giant cell is a large crescentic or round structure with nongranular protoplasm, containing near its periphery numerous elongated nuclei. The little tubercle mass is frequently seen on the wall of a vessel, and develops from the adventitia. This is one means of differentiating histologically a tubercular from a syphilitic node, for in the latter, the growth begins in the intima and the lumen of the vessel is blocked. In the milder forms of the disease, the bacilli are very scarce and difficult to find. It is assumed, therefore, that in some of these cases the exciting cause is not so much the direct action of the bacilli, as it is the irritation caused by the toxines generated by them, circulating through the delicate tissue of the iris, which, for some reason, is unusually sensitive and susceptible.

This is a disease of childhood and adolescence, the large majority of such patients being under the age of twenty years. Of 121 cases reviewed by Schieck (Graefe's Archiv. fur Ophthalmologie Bd. 50, part 2, 1900) ninety-six were under the age of twenty years; while of the remaining twenty-five, only six were over thirty years. The oldest was fifty-five.

Most of the patients affected with tuberculous iritis have either pulmonary tuberculosis or tuberculous manifestations in other structures, such as joints, lymphatic glands or skin. Some have a bad family history, while a few have neither a family nor a personal history

of tuberculosis, nor do they show any manifest signs of the disease, except the lesion of the eye. Such cases raise the very interesting and important question, whether the iritis is primary or secondary to some other tuberculous lesion, and many capable observers take the view that it is primary. It is argued that the eye of a sound person may be infected locally through an abrasion of the cornea, or an ulcer of the cornea or conjunctiva, and that in such manner the bacilli may gain entrance to the deeper circulation of the eye.

OPERATIVE TREATMENT OF POSTERIOR SYNECHIA.

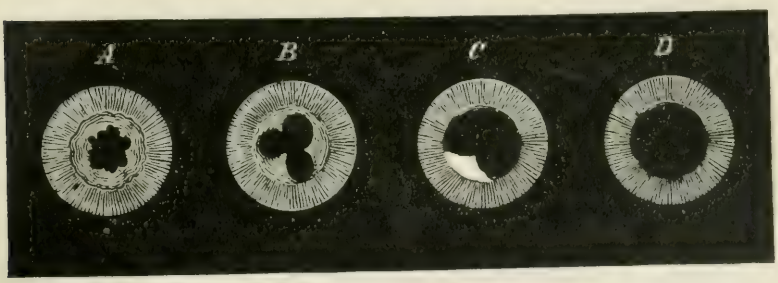
BY J. F. FULTON, M. D.,

Professor of Ophthalmology and, Otology University of Minnesota.

ST. PAUL, MINN.

(Illustrated.)

One of the most delicate operations which the ophthalmic surgeon is called upon to perform, is the release of adhesions of the iris to the lens—in other words posterior synechiae. To remedy such abnormal conditions I advise the use of the instrument pictured in the text. I have used it many times and find it extremely satisfactory. With such an instrument the adhesions can be safely broken up and, as a rule, without producing traumatic cataract. I herewith present the results of operations performed by this instrument.



The importance of relieving this condition without producing cataract is apparent to every one who has given the subject careful consideration. When the adhesions are numerous and extensive, the incessant dragging of the iris, under the stimulus of light and accommodation, may result in serious damage to the eye. With each recurrent attack of inflammation, the adhesions become more extensive and more strongly adherent, indicating the necessity for relief at the earliest possible opportunity, so as to prevent total posterior synechia

which in turn interfere with the normal communication between the anterior and posterior chambers. The seriousness of this unfortunate condition does not seem to be appreciated, as a rule, by the members of our profession. When it is found that adhesions of the iris to the lens resist the action of myriatics, I regard it as imperative to resort to surgical interference. This can be done in two ways: either by iridectomy, or by the breaking up of the adhesions by means of a blunt-pointed crook. If this latter procedure be carried out with a

careful and steady hand it can be done, in the large majority of cases, without rupturing the capsule of the lens. This will be found a much safer procedure than that recommended by Passavant, of tearing the adhesions loose by means of iris forceps. The former plan (originally suggested by Streatfild) has been put in practice by modern operators in many instances, and much more safely than the Passavant procedure.

As to the technique of the operation, the eye should be placed as a prophylactic, under the influence of atropia and every needful aseptic and antiseptic precaution taken. The anterior chamber is now opened by a spade knife and the adhesions carefully broken up by means of the blunt-pointed probe. The instrument is made by E. B. Meyrowitz, St. Paul, Minn.

ABSTRACTS FROM RECENT OPHTHALMIC LITERATURE.

E. A. SHUMWAY, M. D.,

PHILADELPHIA.

A Note Concerning the Statistics of Myopia Operations.—Axenfeld (*Klin. Monatsbl. f. Augenheilk.*, Jan., 1903) calls attention to the danger of late detachment of the retina, after removal of the lens in high myopia, especially when discission of the posterior capsule, or after cataract, is required. He cites three cases in his list of 43 operations, in which, after excellent primary results, detachment occurred, in two cases after discission. He says that there may be a difference of opinion in a given case, as to whether the detachment is the result of the discission or not; many eyes also will stand a late discission. That, however, the discission of the posterior lens capsule *may* lead to detachment in myopes, is true, a fact that has been emphasized, and rightly so, by Hirschberg. At all events the statistics should make more allowance for this possibility of later discissions and their complications, than has hitherto been done. Only when a large number of cases have been watched for many years, can a final and certain opinion be given as to the permanent result, in regard to retinal detachment. He believes that in operating, that method should be adopted which obviates the necessity of subsequent discission. Where the primary extraction of the transparent lens is attempted, he suggests the use of the capsule forceps instead of a free discission of the anterior capsule, as experience has taught that after cataracts come less frequently when the anterior capsule is removed than when a simple cystotomy is done. Those who do discission, by Fukala's method, should endeavor to make large openings in the anterior capsule, which subsequently will not so easily be closed. Axenfeld is accustomed to make a subconjunctival vertical discission of the capsule, at the first operation, extending from the upper to the lower edge of the dilated pupil. If swelling of the lens occurs too rapidly, and the intraocular tension rises, he evacuates the lens by a corneal incision, but makes a free discission of the lateral portions of the capsule, at the same time. If the swelling is less rapid he makes a horizontal opening in the capsule, several days later. He thus secures broad openings, and controls the amount of swelling of the lens, so that secondary glaucoma rarely occurs. More than one linear extraction is never necessary, and a subsequent discission of after cataract has not been required during the two years that he has operated in this manner.

Anatomical Examination of a Case of Primary Gumma of the Iris.—Rumschewitsch (*Klin. Monatsbl. f. Augenheilk.*, Jan., 1903) observed a case of primary gumma of the iris in a man 48 years of age. Iritis had appeared as a secondary symptom a half year after the initial infection, and had recurred five times during the course of twelve years. Finally in the twelfth year of the disease a gumma had formed in the iris, in which synechiæ and ectropion uveæ already existed. It was accompanied by other tertiary symptoms and probably arose first in the vascular stroma of the iris tissue. Anatomically in addition to the atrophy of the iris tissue from the repeated inflammatory attacks, he found a typical gumma, the central part of which was without structure, as a result of the extensive cheesey degeneration of the new formed tissue. The blood vessels were in many places entirely obliterated and isolated nodules formed by comparatively large cells, arranged concentrically around the altered vessels were scattered through the atrophic iris tissue. He could find but three cases in literature, in which pathological examination of a certain case of gumma, originating primarily in the iris, had been recorded. In his case the gumma occurred in the tertiary period. In those of Graefe-Colberg and Benoit it was found during the secondary period, but he does not believe that they are to be excluded, on that account, as Ricord's chronological scheme of the symptoms of syphilis is not infallible, since disease of the meninges has been reported in the first months, and a papular eruption has occurred fifteen years after the infection.

Concerning Iritis Seroso.—Prof. K. Baas (*Zeitschrift f. Augenheilk.* Jan., 1903.) describes the anatomical changes in a case of iritis serosa. His findings agree in the main with those previously described by Grönouw, consisting of new vessel formation in the middle layers of the cornea, round cell infiltration of the posterior lamellæ, irregularity of the endothelium lining Descemet's membrane, and the presence of heaps of round cells on the posterior surface of the cornea, free in the anterior chamber, mixed with fibrin and blood, and on the surface of the iris. The iris was also infiltrated with round cells, and as it was firmly adherent to the lens capsule, so that no communication existed between the anterior and posterior chambers, Baas believes that the precipitated cells on the posterior surface of the cornea could have been furnished only by the iris. He thinks that in many of the cases of iritis serosa the deposits have the same origin, and do not arise from the ciliary body. He likewise considers Arlt's explanation of the presence of these precip-

itates on the cornea as the result of a centrifugal force, due to the movements of the eye, as quite unnecessary. Such movements would only occur in well marked nystagmus, and in ordinary cases the eyeball is moved to and fro with only moderate rapidity. The more probable explanation is that it is a simple sedimentation, and as the exis of the eye is naturally directed downward, so that the concave posterior surface of the cornea is directed upward and backward, the particles precipitate on the cornea, in the form of a triangle, just as they would in a glass flask, turned on its side.

A Case of Tetanus Following Injury of the Eye. — Adolph W. Geuth (*Zeitschrift f. Augenheilk.*, Jan., 1903) describes a case of cephalic tetanus as the result of an injury of the eyeball and lide. Despite repeated injections of tentaus antitoxin, the patient died, during a convulsion, on the 17th day after the injury. At the autopsy a knife blade, 5 cm. long and 1½ cm. broad was found sticking in the antrum of Higmore and projecting 4 mm. out of the orbital tissues below. The point of the knife had been forced past the roots of the last molar tooth, through the alveola process, into the gum. The foreign body, which was entirely unsuspected, had carried in the tetanus organisms, which had multiplied rapidly, away from the air, as the wound in the lid had been immediately sutured, and had produced a hemorrhagic empyema of the antrum. Geuth calls attention to the necessity of careful examinations of all wounds of the eye and orbit for the remains of foreign bodies, a maxim which Berlin and Rose have repeatedly urged.

Changes in the Central Part of the Retina in the Insane.—Prof. Kuhut and Dr. Wokenius (*Zeitschrift f. Augenheilk.*, Feb., 1903) give the results of the ophthalmoscopic examination of 511 cases in the insane and foster asylums of Kortau. Of the whole number 143 showed changes of various sorts, including partial and complete atrophy of the optic nerve, neuritis and neuro-retinitis, retinal hemorrhages, connective tissue formation on the retina, central chorio-retinitis, choroiditis and simple glaucoma. In 27 patients they detected the opacity or veiling of the retina and papilla which was first described by Klein in the insane, and later confirmed by Schreber and Uhthoff. In addtion to these changes they call especial attention to two new conditions: 1st, a disciform opacity of the macula lutea, and secondly, certain changes in the fovea. The first they describe as follows: "The region of the posterior pole over a circular or horizontally oval area (measuring about 1½ disc diameters), ap-

pears more or less dull or lustreless, as though veiled with smoke. The change commences as a delicate veil at the edge of the area, and increases in intensity as the fuvea is approached. In outspoken cases it appears as an almost uniform dull gray disc, with a narrow diaphanous periphery. The vessels in the area are not concealed, but do not stand out so distinctly and sharply as usual. The pigmentation of the region is either entirely concealed or decidedly obscured. The fuvea centralis, if perceptible, appears as a dirty brownish red spot. As a rule the macula and fuveal reflexes are absent." The remainder of the retina was usually clear, and the mucular changes did not affect the visual acuity, nor produce any marked dazzling or hemeralopia. No distinct changes were formed in the retinal vessels. This appearance was found in 34 cases, or 6.6 per cent of those examined, and the authors considered it similar to the changes described by Klein and confirmed by Uhthoff. In 11 cases it was associated with the foveal change described below, and in seven with this and opacity of the papello and the surrounding tissues. Nine were cases of dementia ex paranvia, eight of dementia from no longer determinable psychoses, four of epileptic insanity, four of periodical mania, two each of dementia paralytica, circular insanity and imbecility, and one each of idiocy, melancholia and alcoholic insanity.

The foveal change was found in 42 cases, or 8.2 per cent of all. It consisted of a distinct yellow or pale yellow, sometimes shining spot, which was usually circular in form and occupied the center of the fovea. At times this spot was made up of several smaller spots, of a yellowish or yellowish red tinge, and the surrounding retina was usually obscured by a faint pigment veil, which faded away with the normal retina. In a few cases the condition was not so well marked, and probably represented earlier stages of the process. No scotoma could be detected in any of the visual fields, although the foveal region must have been unable to functionate, nor was the visual acuity seriously reduced, so far as this could be determined. They consider the macular change as an opacity of the fiber layers of the retina, while the foveal spots probably represent a degenerative process, which remains as a permanent alteration, and differs in this respect from the temporary spots seen after ordinary inflammations of the macula. The authors express the hope that their findings will stimulate others to careful examinations of the central part of the retina of insane cases elsewhere.

REVIEW.

The Pathology of Idiopathic Detachment of the Retina.—By Arthur H. H. Sinclair, M. D., F. R. C. S., Ed. *Journal of Pathology and Bacteriology*, Vol. VII., No. 3, 1902, and printed in Laboratory Reports Royal College of Physicians, Edinburgh, Vol. VIII., No. 16, 1903. It is an established fact that detachment of the retina occurs in connection with morbid changes in the vitreous. Sinclair has demonstrated by experimentation that alteration of the vitreous may cause adhesions to form between it and the retina posteriorly, and cause detachment of the retina by subsequent contraction. This observer found also that the absorptive power of the choroid is very feeble, and accordingly he disputes the theory of Leber-Nordenson, which declares that idiopathic detachment of the retina is due to a process of diffusion of fluid from the vitreous, which settles beneath the retina. He did, however, conclusively prove that detachments were precipitated and distinctly augmented when a highly albuminous fluid was injected beneath the retina. Therefore, he assumes that idiopathic detachment of the retina is dependent upon affections of the choroidal circulation, whereby the osmotic properties of the vessels are interfered with and the collection of fluids is allowed to accumulate beneath the retina with its consequent detachment.

It is difficult to say whether the increase of post-retinal fluid is due to choroidal transudation or to diffusion from the vitreous. According to Sinclair's observations it is probable that it is due to the diffusion of vitreous fluid, because he found no rupture of the retina, neither was there excess of intraocular tension during the intervening stage of the detachment. An analysis of the post-retinal fluid in cases of detachment has shown that fluid to be highly albuminous, whereas, normal vitreous is composed almost entirely of water, and contains only a trace of solids. Also, as the transuded fluids found in cases of inflammation of serous surfaces have yielded greater quantities of albumin than when brought about by pressure as after ligature, it is safe to infer that the post-retinal fluid in detachment has been transfused from the choroidal vessels. Moreover, distinct inflammatory processes involving the choroid are commonly found associated with detachment of the retina.

The fact that changes in the vitreous often take place in eyes in which retinal detachment subsequently occurs cannot be taken as any proof that these changes cause detachment of the retina. Although they are often found together they are without doubt both dependent upon the uveal inflammation present.

Walter H. Jessop, M. B., F. R. C. S. Some Points in the **Pathology of and Prognosis in Glioma of the Retina, with Cases.**—With the utmost conciseness Jessop reviews the literature of glioma of the retina, and analyzes the histories of several cases occurring in his own practice. He has embodied his records in an admirable paper which he presented as the presidential address in the Ophthalmological Section of the British Medical Association in July, 1901, and now published in the St. Barthalomew Hospital reports for 1903.

He considers that glioma probably commences as an alveolar condition with marked connective tissue stroma. That at first rosettes or balls of cells with a clear lumen are found, but as the tumor grows and degeneration begins, then occur finger or worm-like processes consisting of a mantle of cells surrounding the blood vessels. This is followed at times, even before the growth has reached beyond the eye, by loss of definite structure, and the growth assumes the form of a round-celled sarcoma. In all growths outside the eye the structure is that of a round-celled sarcoma. When the growth also invades or infiltrates the choroid or iris the structure consists simply of cells without any tendency to definite arrangement.

In his opinion the obscurity in which the understanding of the origin of this affection is surrounded cannot be cleared until cases can be seen and studied at an earlier period than that in which most cases have commonly been reported. In his own cases the youngest child was aged 13 months. The changes in most cases take place so rapidly that even the alveolar condition is soon lost and degeneration begins. The rosettes upon which Wintersteiner lays such stress are found chiefly in the early stage and only in the intra-ocular stage.

In his studies Jessop could not define the origin of glioma as taking place in the nuclear layers, because there was a marked dissimilarity between the cells of the new growth and those of the retinal layer; and because of the slight reaction produced by the presence of the tumor cells in the retina. Following Cohnheim he thinks the origin is from some developmental embryonic tissue. This could account for both eyes being affected so frequently (20 per cent), and in such cases for the growth starting in both eyes separately.

He finds no reason for supposing this tumor to be a carcinoma, either pathologically or clinically; on the contrary, his specimens seem to indicate it to be a sarcoma and it is to be classified as an endothelioma, as the retina surely contains sufficient endothelial tissue to give rise to such a tumor.

He does not attempt, from his own results, to establish a rule as to the prognosis, for in his six cases the intraocular gave 100 per cent of recoveries after the removal of the eye, and the extraocular only 25 per cent. Nevertheless he safely presages that success follows the intraocular cases, while it is seldom that any operative procedure can save the patient's life in the extraocular, and there will generally be a recurrence of the malady. As recurrence takes place rapidly, there is little to fear if the orbit is healthy three months after the excision of the globe. So far, no case is reported in which glioma has undergone a spontaneous cure. Hence the neglected or delayed cases must have a fatal issue. In enucleating the globe it is important that the nerve should be excised as far back as possible.

Pathogenesis of Glaucoma.—Clinical and Experimental Researches by Uribe-Troncoso of Mexico. *Annales D'Oculistique,* Dec., 1901.—In an exhaustive paper contributed to *Annales D'Oculistique,* Uribe-Troncoso of Mexico publishes his clinical and experimental researches in the pathogenesis of glaucoma. He has divided his studies into the following chapters: Primary or Essential; Simple Chronic; Secondary and Experimental Glaucoma; the Action of Iridectomy, etc.

In the analysis of the literature upon the subject of glaucoma, the author is led to the belief that the studies of other observers have not been complete. He has accordingly studied carefully in a series of cases the *chemical* composition of the aqueous humor extracted from the anterior chamber of eyes operated upon by him for the relief of this malady.

He finds the density of the aqueous humor in these cases higher than the degrees obtained by other observers in the estimation of the normal fluid, and in his own cases of cataract or of interstitial keratitis. The quantity of mineral matter was accordingly increased in the original fluid and markedly reduced in the fluid reproduced after incision. The results of the estimation of the organic elements are most startling. He finds that while in cases of serous iritis, albumin was present to only 0.35 per cent, in glaucoma it was seen as high as 30 per cent, and that albumin was present in cataractous cases only after operation. The albumin has appeared in small masses not only in the primitive but also in the reproduced humor, in which indeed the quantity of organic matter was excessive.

The author concludes from his observations that these abnormal elements in the aqueous humor must be indicative of serious changes which have taken place in the walls of the blood vessels by reason

of which the albuminoid elements readily pass through them and permeate the ocular tissues. He attaches also much importance to the changes in the chemical composition of the humor. His researches, while of distinct value, are offered as suggestions for and pointing towards further investigation in the pathogenesis of this malady, which is even today shrouded in great obscurity.

The results in the series of his investigations so constantly agree that the author believes that all the clinical manifestations in glaucoma are due to exosmotic processes, whereby the aqueous humor is rendered albuminous. The filtration paths are unable to accommodate the increased density of the fluid, whereupon obstruction and retention occur with ensuing hypertension. These vascular changes are arteriosclerotic in character and are analogous to the vascular changes seen in interstitial nephritis. The actual quantity of humor obtained was always less than that obtained in observations in the normal state.

Without doubt the vasomotor nervous mechanism is disturbed to such a degree that the dialbuminosis is greatly favored. It is reasonable to suspect that the palliation secured by the operations on the cervical sympathetic, so recently exploited, depends upon the withdrawal of the abnormal influences exerted by the sympathetic system.

Influenced by these observations, the author successively studied the symptoms of the malady and supports his theory by the clinical facts elicited. He also conducted a series of experimentations upon rabbits. Injections of egg-albumin and of sodium chlorid into the anterior chamber gave rise to a group of symptoms dependent upon the retention of the intraocular fluids, and although the filtration paths remained open, it was evident that there had been no hypersecretion of the aqueous humor. The symptoms subsided on the disappearance of the infected fluids. Sodium chlorid was eliminated more rapidly than albumin. BURTON CHANCE.

In the symposium on headache at the semi-centennial celebration of the founding of the Dubuque Medical Society, held at Dubuque, Ia., in June, Dr. Casey Wood, of Chicago, presented the ocular aspect of headache. Dr. Norval Pierce, of Chicago, read a paper on nasal headache, Dr. Hugh Patrick, of Chicago, gave an admirable address on migraine. Dr. A. C. Croftan, of Chicago, presented the subject of headache due to vicious metabolic changes, while Dr. J. S. Lewis, of Dubuque, spoke of headache from the standpoint of the reproductive organs.

THE
OPHTHALMIC RECORD
A MONTHLY REVIEW OF THE PROGRESS OF OPHTHALMOLOGY.

VOLUME XII, No. 7. CHICAGO, JULY, 1903. NEW SERIES.

REPORTS OF SOCIETIES.

EXTRACTS FROM THE MINUTES OF THE SOCIETY OF OPHTHALMOLOGISTS AND OTOLOGISTS, WASHINGTON, D. C., MARCH 20, 1903.

REPORTED BY DR. W. N. SUTER, SECRETARY.

Dr. Burnett reported a case of a man who, under the delusion arising from a prolonged spree, had inflicted, a few days previous, a severe *injury to his left eye with a lead pencil*. The pencil had penetrated the orbit at the inner angle; the eyeball showed no signs of injury either externally or ophthalmoscopically. There was ptosis, and the motion of the eyeball was absolutely lost, as was also vision. Dr. Burnett said he had not yet been able to decide whether the loss of vision was due to hemorrhage or to rupture of the optic nerve.

Dr. Butler exhibited a patient whom he had shown at a previous meeting, the dislocated lens of one eye having, at that time, recently moved from the vitreous into the anterior chamber. When the patient was brought to operation, on the day after he had been previously shown to the society, the lens had again disappeared in the vitreous. By suitable manipulation of the patient's head the lens was gotten into the anterior chamber, where it was held by a stop-needle, and was finally extracted through an incision made at the lower border of the cornea. Recovery was rapid and uneventful.

Dr. Shute *reported his experiences with Cuprol, Protargol and Argyrol.* A young woman from Virginia had come to him with trachomatous granulations and extensive pannus. As she refused operative treatment he gave her a 10 per cent solution of cuprol to be used three times a day. At the end of three weeks there was marked improvement, and after three months she came to Dr. Shute's office, and he was surprised to find all pannus gone, and only one or two granulations on the lower lid; none on the upper lid. As to protargol he had found it very unsatisfactory—painful and productive of

congestion. He had found argyrol very beneficial in ophthalmia neonatorum. He had recently treated 17 cases of this affection in one of the city hospitals. In the last seven cases argyrol had been used, and in all the pus had become inappreciable in from 48 to 72 hours, whereas, in the earlier cases, in which this drug had not been used, the course of the disease was slow. Credé's method had been used in all cases.

Dr. Burnett said he was unable to account for the large number of cases following the application of Credé's method. He thought it probable that this had not been properly applied.

Dr. Belt asked whether gonococci had been found in the pus.

Dr. Shute, referring to Dr. Burnett's criticism, said he had given explicit instructions as to the application of the nitrate of silver applications, but he had not personally seen them applied. He said gonococci had been found in two cases.

April 17th, 1903.—Dr. Malone reported a case of a boy eight years of age who was *shot in the left eye* last August with an arrow. Dr. Malone first saw the case in October. At this time there was a scar in the ciliary region with inclusion of the iris, but no inflammation. The patient had been brought to Dr. Malone on account of recurrent iritis in the right eye. At this time V was 18/20 in the right eye and 18/50 in the left eye. Dr. Malone, after seeing the patient in several attacks, called Dr. Burnett in consultation. They both agreed that at that time enucleation of the left eye was not advisable. Later they noticed a cyst in the iris of the left eye. The cyst was excised March 13th, 1903. The eye remained in an unhealthy condition, vision failed, and tension became subnormal. On April 7th the eye was enucleated; V (right eye), 18/50; no iritis since enucleation (10 days).

Dr. Burnett reported the progress of the case of *self-inflicted injury to the orbit* which he had reported at the last meeting. On Sunday last ptosis had disappeared, there was some motion of the eyeball, and vision was 5/25. The optic nerve was distinctly whiter than normal. In view of the improvement in vision, he attributed the temporary blindness to hemorrhage, and not to rupture of the optic nerve, as he had at first been inclined to do.

Dr. Wilmer reported a case of *complete temporary blindness in a girl eight years of age from a blow on the nose with a baseball bat.* There was no unconsciousness after the injury, and it was three days later that failure of vision was noticed. The right eye first failed and later the left. When Dr. Wilmer saw her, nine days after the

injury, there was marked proptosis and retraction of upper lids, complete blindness, and no pupillary reaction. Ophthalmoscopy showed double optic neuritis. She was put upon iodides and ice applications were made over the eyes. In two hours she could see a light, and improvement continued until in three weeks, when she left the hospital, V was 3/200; no proptosis. The pathology was the interesting feature—whether there had been a fracture near the chiasm with hemorrhage, or whether the double neuritis was the result of concussion. Dr. McKimmie thought the force of the blow was conveyed through the nose to the sphenoid where a fracture had occurred. Several of the other members present expressed their agreement with this opinion.

Dr. Belt read a paper on the *treatment of soft (or juvenile) cataracts.* After reviewing the text-book recommendations of discission and suction, he spoke of those cataracts which fail to absorb after repeated needlings. He had come to the conclusion that it was better to extract such cataracts than to waste time with many repetitions of the needling process. He was more and more adopting the habit of extracting this class of cataracts through a small incision made with the keratome, a Daviel curette being introduced into the anterior chamber to facilitate the outflow of the soft lens. The extraction was usually preceded by a free needling five or six days earlier. In the discussion Dr. Burnett said he preferred the more tedious process of needling, and that in those cases in which extraction was necessary, he did it without preliminary needling.

May 22d, 1903.—Dr. Wilmer reported the progress of the child struck on the nose with a baseball bat, of whom he had spoken at the previous meeting. Complete recovery with normal vision and fields for colors had taken place. The temporal sides of the nerves were slightly whiter than normal.

Dr. Belt reported a case of a *lime-burn of the conjunctiva and cornea* which had occurred one day previous. The accident resulted from the patient receiving in his conjunctival sac a mass of fresh plaster. A physician had seen the case and had extracted some of the plaster, but a good deal of this still remained in the conjunctival sac when Dr. Belt saw the case. He had much difficulty in removing it all, but by softening it in dilute vinegar on a cotton-wrapped probe, he finally succeeded. The cornea was opaque at the first examination but on the following day it had cleared so that he could see the iris and pupil. At this time both lids were adherent. He tore these loose and applied oil. He asked if any of

the members could make suggestions as to how best to avoid the formation of symblepharon. Dr. Butler suggested the use of a sterilized pellicle of an egg, which had been recommended, but said that personally he had found olive oil efficient.

COLORADO OPHTHALMOLOGICAL SOCIETY.

Meeting in Colorado Springs, Dr. Edward Jackson presiding.

Dr. Friedmann read a paper detailing his observations at a recent visit to the Berlin eye clinics.

Dr. Patterson read a similar paper on visits to Moorfields, London, strolls along the Rhine and the eye clinics of Paris.

Dr. Black spoke favorably of Casey Woods' recent utterances concerning the value of *Buller's method of suturing each canaliculus* as a preliminary to cataract extraction where there is blennorrhœa of the lachrymal sac.

Dr. Marburg reported a case of *anterior uveitis non-specific,* with general corneal infiltration and minus tension, which showed an increase in tension to nearly normal after two applications of 6 per cent iodo-vasogen. His report was given as a confirmation of Duane's claim that the tension of the eye in such cases is frequently improved by the remedy. Dr. Black recommended his method of using atropin in cases rebellious to its action as ordinarily used. He advised that according to the necessities of the case, the drug may be used in the conjunctival sac either in the solid form or in solution. He then applies an ordinary sponge electrode, one and one-half inches in diameter, to the closed eye lid, this electrode being connected with the negative pole of a galvanic battery, a similar sponge electrode connected with the positive pole being placed back of the ear. Three milliamperes of current is then passed for five minutes. He claims to obtain more marked dilatation of the pupil than by any other means, and in a speedier manner.

Dr. Neeper reported a case of rebellious *dendritic keratitis* which had increased under the actual cautery, carbolic acid and tr. iodine used locally in the order enumerated, which quickly improved under 20 grain doses of quinine. The patient had no malarial infection, having resided in Colorado for fifteen years. No examination of the blood had been made.

Dr. Black spoke in verification of the claims heretofore made that Dionin increases lymphatic action and resolution in iritis and corneal

ulcers, particularly of the recurrent variety. He thought in corneal scars he had noted a more rapid absorption following its employment. He suggests its employment in solution and in powder, though admitting the latter method caused much discomfort for one or two hours following its use. J. A. PATTERSON, Sec'y.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Friday, May 8, 1903.

W. Lang, F. R. C. S., president, in the chair.

Drs. A. Paine and F. J. Poynton read a paper on *Rheumatic-Iritis*, in which they endeavored to establish the identity of the pathological changes in rheumatic iritis with those occurring in other accepted rheumatic affections. The diplococcus of rheumatism developing in the tissues and cells rather than in the fluid exudate rendered the identification of micro-organisms in fluids obtained by paracentesis of the anterior chamber unsatisfactory, while the opportunities of examining the iris in the acute phase of the inflammation in the human subject did not often occur. The specimens therefore of iritis exhibited which showed the diplococcus in situ had been produced in the rabbit. The distribution of the organisms was similar to that occurring in synovial membranes showing dense clumps.

Observations were made by the president, Messrs. Hartridge and Holmes Spicer in regard to the extreme rarity of iritis as a complication of true acute rheumatism, and of the probability that most of the so-called cases of rheumatic iritis had really their origin in gonorrhœa.

Dr. Poynton said in reply that the special micro-organism when present was easy to find, but he was not sanguine about finding them in portions of iris removed in the quiescent period, as the subsidence of active inflammation was dependent on their destruction or reduction to a state of latency.

Mr. W. H. H. Jessop described two cases of *tuberculous choroiditis* associated with conjunctival tubercle. The first was that of a girl aged nine, who had a round, smooth mass on the conjunctiva which reached nearly to the limbus of the cornea. This was incised and tubercle bacilli were obtained from it. The retina was detached with two masses obscuring the disc. The eye recovered with vision of 6/18.

The second case was a woman aged twenty-three, who had tubercular disease of the breast and a strong family history of tubercle. While under observation masses in the choroid were seen to spread from the center towards the periphery, leaving but little trace behind

them, and now, upwards of three years after, the patient has recovered with good vision.

Mr. Sydney Stephenson said that tubercle of the choroid, like some other conditions regarded as rare, ceased to be so when systematically looked for. Among 119 cases of tuberculosis he had examined in surgical wards, he had found about 10 per cent in which the choroid was affected. He endorsed Mr. H. Jessop's observations as to the absence of residual pigment and vitreous opacities.

Mr. Juler mentioned one case that had recovered under local treatment alone. Remarks were also made by Messrs. Johnson Taylor and Holmes Spicer.

Mr. A. F. MacCallan reported five cases of *glaucoma in which adrenalin caused increase of tension*. The increase of tension occurred in all the cases consequent on the use of adrenalin in eyes which had already had marked symptoms of glaucoma. Except in these cases this was not the invariable consequence of the use of adrenalin, but the writer had seen two cases in which retinal hemorrhage had occurred after its use. Other cases in which it had been used showed no change in tension or in the fundus, but the vascular constriction produced by adrenalin appeared to prevent the absorption of other drugs, such as myotics.

Mr. Jessop spoke of the pain and increased tension produced by adrenalin in scleritis and episcleritis. He found that engorgement followed constriction of the vessels.

Mr. J. H. Parsons thought that the effect of adrenalin was by no means uniform. Complications following its use were probably due to dilatation of collateral or deep seated vessels and reactionary dilatation of the superficial ones after the initial contraction had subsided. Remarks were also made by Messrs. Harman, Holmes Spicer and Johnson Taylor.

Dr. E. Donaldson communicated a case of *proptosis and deformity of the head* in a male child aged two and one-half years, the youngest of three. The eye had several times become dislocated forwards. There was no defect in other special sense or intelligence. There was slight horizontal nystagmus, but the lids covered the eyes during sleep. There was no pulsation, but the globes could not be pressed back. So far as could be made out with the finger, there was no deformity of the orbital plate. The vision was defective, the optic discs being pale, but the corneæ were clear. The case was similar to one shown to the Society in 1894. The shallowness of the orbits being due to premature synostosis as pointed out by Swanzy.

C. Devereux Marshall, F. R. C. S.

XIV. INTERNATIONAL MEDICAL CONGRESS, MADRID, APRIL 23-30, 1903.

SECTION OF OPHTHALMOLOGY.

Reported by Menacho, of Barcelona. Translated by Dr. Albert B. Hale, Chicago.

Dr. Albitos (Madrid) opened the session. Menacho (Barcelona) proposed Fuchs (Vienna) for president (of the day) and Antonelli (Paris) secretary.

Castresana (Madrid) read the first paper:

Surgical Treatment of Diseases of the Lacrymal Passages. He divided the subject into dacryocystitis acuta, pericystitis or prelacrymal tumor, dacryocystitis mucosa, dacryocystitis purulenta. Treatment is largely surgical, dilatation, injections, sounds. He is somewhat opposed to large sounds or to great force. In purulent dacryocystitis he favors extirpation, preferring the cautery method; but excision with curettage are also practiced.

Lapersonne y Rochon-Dunigneaud (Paris) read a paper on the same subject, elaborating of etiology and pathology. They discuss electrolysis, Stilling's knife, curettage, thermocautery, dilatation with sounds, extirpation.

La Grange (Bordeaux) said he had used electrolysis with great success, never using more than 10 m. amperes.

Blanco (Valencia) believed in dilation with small sounds, electrolysis before extirpation.

Terson (Paris) divided his cases into two classes: the infected, and the non-infected (nonsuppurating); the latter again into hypersecretion and hyposecretion. Hypersecretion he cures by extirpation of the lacrymal gland (de Wecker). Other cases by dilatation. Silver salts injected are of service.

Jocqs (Paris). In pericystitis a cure is possible without extirpation.

Santos Fernandez (Habana) has seen benefit from electrolysis.

Würdemann (Milwaukee) declares it necessary to treat the nose as well. In America silver salts (and protargol) are of value.

Suarez de Mendoza (Paris) likes electrolysis, six m. amperes. He emphasizes three points: (1) To open the canaliculus properly. (2) To treat the nasal mucous membrane. (3) To use sounds graduated at very small intervals.

Dor (Lyons) prefers large sounds (Weber).

Caraet (Barcelona) extirpates the sac, or uses the cautery.

Bloch (Ratisbon) advises scarification of sac by Stilling's knife.

Antonelli (Paris) tries the potency of the passage (especially in children) by injection of colored fluid (fluorescin). He likes protargol bougies.

Gad (Copenhagen) at times uses a sound from the nose up.

Barraquer (Barcelona) advises antisepsis and the use of injections of formal 1.100.

Jessop (London) recommends bacteriologic examination of secretion and likes injections of sodium chloride. He was the first to employ electrolysis, but has now abandoned it.

Marquez (Madrid) injects one drop of a strong Ag. NO_3 solution, using therefore a specially constructed syringe.

Wieden Portillo (Valencia) reported a case of myoma of the passage, expelled after electrolysis.

Castresana (Madrid) says extirpation by knife of sac is better than by paste.

Anatomy of the Fundus of the Orbit and of the Sphenoidal Linus. Barraquer (Barcelona). The orbit is supplied by the body and wings of the sphenoid with three sides and three angles. (The description is purely anatomical.)

Anatomic Arrangement of the Nasal Canal in the Negro, Explaining his Lessened Disposition to Disease of the Lacrymal Passage. Santos Fernandez (Habana) draws the following conclusions: (1) The nasal canal of the white is longer and more tortuous and narrower, and therefore more liable to disease. (2) The nasal canal of the negro is straighter and broader, and therefore disease is easier overcome.

Necessity for Unifying Methods for Noting Muscular Anomalies. Howe (Buffalo) concludes: (1) The numeration of prisms differs in each country. (2) There is confusion in using prisms to diagnosticate static conditions of muscles and consequently confusion in results. (3) The same confusion in diagnosticating dynamic muscular conditions. (4) There is confusion in different countries in expressing muscular anomalies.

Photographic Method of Measuring Lateral Excursions of the Eyes. Howe (Buffalo) concludes: (1) By showing various methods. (2) Demonstration of his apparatus. (3) Results on a normal eye. (a) By a small arc. (b) By a broad arc. (c) Adduction greater than abduction. (4) Demonstration of photograms. (5) In view of the confusion existing it is advisable to establish an international committee to secure uniformity in expressing a measure of muscular anomalies.

Principles and Methods of Determining Function of the Lacrymal

Glands. Schirmer (Griefswald) concludes: (1) Functional examination of the gland should be based on result of reflex irritation. (2) The quantity of secretion during a given time, or time required to produce a given quantity, should be the unit. (3) Thus a diminution may be measured, but an increase is less determinable.

Wicherkiewicz (Krakaw) presided.

Jessop (London) read Landolt's paper: *Necessity for a Unification of Optometric Scales.* (1) Definition of visual acuity. (2) Principles in its determination. (3) Uniformity in measurement. (4) Progression of degree of acuity represented by optometric scales. (5) Distance at which examination is made. (6) Color of type and adjustment of scale. (7) Illumination. (8) Form of a universal test chart. Snellen's principles should be followed, but the opened circle should be preferred; no less than five meters should be used: result expressed in decimals; not too much light used, black on white ground with Aüer or electric light.

Cuevas (Madrid) covered the same subject, with these conclusions showing the need of unification according to Snellen's principles. The chart must be of universal applicability (consequently Landolt's broken circle). Five meters is the most practical distance, the illumination must be constant, preferably artificial; gradations must be exact, and there should be an intermediate number between one and two; but if less than one is readable, the distance may be lessened. The measurement of the near visual oculity is not necessary, since other factors are involved. The sun figure for astigmatism is not necessary, since skiascopy is a better method. Transparent type and some in colors are preferable.

Presas (Barcelona) reached practically the same conclusions.

Antonelli insisted on uniformity of examination by every observer.

Jessop (London) congratulated Presas on the new word *gonioptica.* The *minimum separable* is what is measured, not the *minimum sensible.* Landolt's test is the best.

LaGrange (Bordeaux) is skeptical about the practical need of such exactions. Each case must be measured by itself.

Blanco (Valencia) thinks that a chart must be usable for children and illiterate as well. For some persons the usual visual angle is too small, for others too large. Distinction is made between clinical and physiologic examination.

Aguilora (Granada) said that Cuevas' scale was not geometrically perfect; Green's scale was better. He preferred the fraction in expressing decimal acuity.

Marquez (Madrid) would select a system in harmony with dioptric nomenclature, such as the inverse relation I — F.

Cuevas responded that he wished the Congress to adopt some scale, either his or any other.

Menacho (Barcelona) suggested that the Paris, 1900, Committee be asked to report. The question was scientific and practical, and must be answered in both directions.

Sclerectomy. Blanco (Valencia) at one time excised all eye balls showing high grade of staphyloma, but of late he has performed anterior sclerectomy; this is done between inferior and external rectus, allowing vitreous to escape and establishing a filtration from interior of globe into conjunctival sac, the conjunctiva being sutured over the wound. Such an operation is applicable to absolute glaucomas and other conditions where extirpation is to be avoided.

Santos Fernandez (Habana) opposed the operation. Hypertomia can be combated by pilocarpin, otherwise enucleation is necessary.

Blanco replied that infection of vitreous can be avoided by strict antisepsis.

Treatment of Secondary Glaucoma due to Iritic Adhesions (anterior synechiae). Reina Martinez (Madrid) laid down the rule to destroy the iritic adhesions wherever possible. This is better than iridectomy or miotics.

Antonelli (Paris) advocated the knife of Vincentiis for the operation, as it avoids escape of aqueous.

Menacho (Barcelona) uses a very fine Graefe knife.

Hemeralopia and Amaurosis Hysterica Treated by Physiologic Horse Serum. Santos Fernandez (Habana) was enthusiastic for his results in this method.

Barrequer (Barcelona) questioned any cure on an hysterical subject.

Reina (Madrid) thought much of the cure was due to suggestion.

Strabismus Treated by the Advancement Operation. Jocqs (Paris) siezes a conjunctival fold above the muscle through which he passes a double armed thread tangential; then he incises the conjunctiva vertically, seizes the tendon in forceps and cuts it without using the hook. Then without releasing the muscle he inserts both ends of the thread through muscle, capsule and conjunctiva; they are then tied whereby the tendon is advanced toward the cornea. The suture is left five or six days. Tenotomy of antagonist may be practiced, if advisable.

LaGrange (Bordeaux) has never tried the plan, but admires it.

Menacho (Barcelona) admired the operation, but criticized its lack of dosage.

Swanez de Mendoza (Paris) feared a too great conjunctival puckering.

Blanco (Valencia) referred to his graduated advancement forceps, with which he can measure the advancement.

Jocqs, in reply, stated that practically there was little conjunctival puckering and that the amount of advancement could be estimated with relative accuracy.

Herpes Corneae, Zona Ophthalmica and Keratitis Neuroparalytica, clinically considered. Menacho (Barcelona) said that these manifestations occurred in the ophthalmic branch of the fifth nerve. Their essential character was as yet unknown, although it is associated with vasomotor and sensative alterations. Zoster and zosteriform eruptions are not the same. Pseudo zona is the link uniting corneal herpes and neuroparalytic keratitis. The tissue in which the manifestation develops probably depends upon the portion of the ophthalmic branch involved; in the ciliary nerves, herpes corneæ; pseudo zona, if the nasal branch is affected; keratitis neuraparalytica from the ophthalmic ganglion.

Antonelli occupied the chair. Reina presided while the first paper was read.

Neuritis Optica in the Course of Acute Infections. Antonelli reached the following conclusions: (1) All infections (including constitutional) diseases may attack the optic nerve. (2) Influenza shows either a papillitis or neuroretinitis or retrobulbar neuritis; as a toxic infection. (3) Syphilis, rarely in the acute, commonly in the chronic stage, usually shows itself as subacute retrobulbar neuritis. (4) Typhoid (intestinal diseases) rarely has neuritis, but it is recorded. (5) Scarlet fever, smallpox, variola, malaria, diphtheria, erysipelas, polineuritis (beri beri), meningitis, rheumatism, purpura typhus, cholera, rabies roseola, malignant pustute, lepia—all may cause neuritis, usually of a bilateral type. This shows that the optic nerve is quite susceptible. Prognosis is grave, but hopeful. Treatment must avoid depressant, the general disease must be overcome, but strychnine is of great service.

Marquez reported a case from gastrointestinal affection that ran a rapid course, ending in blindness, though the patient quickly recovered his general health. His opinion was that no direct prognostic relationship existed between the disease and the neuritis.

Samdille (Nantes) in examining optic nerves after death from typhoid, rarely saw inflammation there.

Barraquer (Barcelona) has seen one abscess in smallpox extending from the lid and involving the optic nerve.

Santos Fernandez (Habana) would add yellow fever to the list.

Wicherkiewicz (Krakaw) would add La Grippe.

Blanco (Valencia) Otitis media.

La Grange (Bordeaux) would divide cases into those caused by bacteria and those by toxins.

Gradaille (Caruna) saw a case from dental disease.

Suarez de Mendoza (Paris) favors pilocarpin sweats.

Saurdille (Nantes) thinks the disadvantages of pilocarpin outweigh its advantages.

Baro (Madrid) and Wicherkiewicz have seen only good in pilocarpin.

Suarez de Mendoza (Paris) insisted that pilocarpin was a grand remedy.

Suarez de Mendoza (Paris) *Strabismus and its Treatment,* insisted on the advantage of systematically distributing the correction between both eyes. He is not an enthusiast for advancement.

Fage (Amiens) thinks that by advancement with tenotomy one operation often suffices, using orthoptic exercises afterwards.

La Grange (Bordeaux) supports Suarez de Mendoza—a slight tenotomy is often better, especially cosmetically.

Jocqs (Paris) prefers advancement.

Terson (Paris) thinks that only in alternating convergent strabismus with good bilateral vision is double simultaneous tenotomy advisable.

Caract (Barcelona) much prefers advancement.

La Grange (Bordeaux) likes to operate only both eyes, chiefly for the reason that the cosmetic results are thereby better.

Menacho (Barcelona) studies each case by itself. Slight cases do well with simple advancement; more pronounced cases demand tenotomy as well.

Castrasana (Madrid) tenotomizes in pronounced cases; in very bad cases he advances.

Jocqs (Paris) added that in young children operation could often be avoided by correcting refraction.

In discussing the paper of Wicherkiewicz of *Glaucoma Consecutive to Operation for Cataract,* Sourdille (Nantes) said that probably there was a disposition to glaucoma in such cases.

Castresana (Madrid) advised selecting simple or combined operation according to tension.

Reina (Madrid) ascribes the glaucoma to incarceration of iris. Iridectomy will not prevent it, as it occurs chiefly in these cases.

Baro (Madrid) agrees with Reina. Treatment is to relieve the incarcerated iris, if possible, sclerotomy and miotics, massage.

Menacho (Barcelona) reported of a case of chronic glaucoma OU— with post operative cataract OD subsequent to iridectomy, OU. Removal of the lens OD preserved this eye—in the OS vision was lost.

Caract (Barcelona) differed from Reina.

Wicherkiewicz ended by saying that the chief treatment was preventive. For that reason he used no mydriatic before operating—rather a miotic. Only after some days did he use scopalomin to avoid posterior synechiæ. If glaucoma develops he used drops of eserin 1.100, pilocarpin 2.100, cocain 1.100.

Operation for Total Staphyloma of the Cornea. Leroy (Paris) proposes with Beers or Graefe knife to make a corneal section through to staphylomatous area so as to release the lens. The eye then allows the cornea to sink to a more natural level and after the stophyloma disappears, subsequent irregular tissue may be tatooed.

Blanco (Valencia) acknowledged that glaucoma in staphylomatous eyes was often due to presence of the lens, but not always. Iritic adhesions sometimes prevented restoration of cornea to the natural.

Wicherkiewicz (Krakaw) sutured the cornea with catgut before releasing the lens. He sometimes excised the cornea.

La Grange (Bordeaux) closed the corneal wound by traction on the outer and inner recti by means of a suture.

Leroy did not excise cornea. He thought that by releasing the lens, the cornea returned to a more natural shape, without excission.

FOURTH DAY, APRIL 28, 1903.

La Grange (Bordeaux) was the presiding officer of the day.

Blepharitis Ciliaris and its Dermatologic Classification. Terson (Paris) would divide cases clinically into the nonsuppurative and suppurative, the latter caused by micro-organismic invasion, the former being of two types, with dry crusts, or with moist, oily crusts.

Iridochoroiditis and Panophthalmitis following Meningitis Cerebrospinalis Gonococcica. Galezowski (Paris), read by Albitos (Madrid), concluded that (1) Iridochoroiditis and iritis with hypopyon may supervene on a gonorrhœal rheumatism. (2) Optic neuritis may be due to meningoencephalitis blennorrhagica. (3) These may be complicated by keratitis, pupillary occlusion, panophthalmitis, all of which can be treated only by constitutional means.

Adrenalin in Ophthalmology. Doctress Arrago y Marquez (Madrid) stated that the drug (1 or 1-5 .1000) produces an ischemia, marked if hypermia is superficial, affecting chiefly the smaller blood-vessels. It is usual preceding operations either instilled or injected, or to combat inflammations, or for esthetic purposes. It is to be avoided in deepseated lesions.

Reina (Madrid) compares adrenalin to O in arithmatic somewhat negative itself, but of great value in combination with other drugs.

Mansilla (Madrid) had had no effect on the iris from the drug.

Barraquer (Barcelona) had used it as adjuvant with good success in spring catarrh.

Terson (Paris) thought it should be avoided in corneal conditions.

Prognosis of Glioma Retinal after Operation. Jessop (London) bases his prognosis on eighty-three cases intra and extraocular. The intraocular cases (if neither the nerve nor the lamina cribrosa are invaded) turn out well. Cases of extraocular involvement are nearly hopeless.

The Severer Forms of Epithelioma of the Conjunctiva. Fage (Amiens) states that the usual form is rather benign, but if other tissues are once invaded the prognosis is grave.

Terson (Paris) thinks the presence of glycogen in the tumors, is a better guide to prognosis than is histologic examination.

Dor (Lyons) proposed that a committee be appointed to investigate the causes of blindness and means for its relief, this committee to be composed of members from different countries.

Local Action of Chlorhydrate of Codein on the Eye. Marquez (Madrid) compared codein with its homologue dionin and concludes that in 5.100 solutions its effect is similar but much weaker—vasodilatation, chemosis, local analgesia—and of only transient action.

Ocular Irrigation, with a New Instrument. Portillo (Valencia) is an advocate of thorough and excessive irrigation to inflamed conjunctivæ. An instrument for that purpose made by Luer, is a Desmarres elevator with perforations along its edge and a hollow handle.

Baro (Madrid) objected to use of great force in irrigation.

Blanco (Valencia) thought the method serviceable in trachoma.

Operations on Hemophiles. Block (Ratibon) stated the dangers of such patients and advised careful questioning of the history, especially in glaucomatous state.

Jessop (London) was presiding officer for the day.

Action of Drugs on Pupil, Accommodation and Intraocular Ten-

sion. Marquez (Madrid) reviewed the effect of atropin, dubuison, scopolamin, homatropin euphthalmin, cocain, as to mydriatic conditions.

Trachoma, its Etiology and Prophylaxis. Zapatero (Madrid) stated that trachoma avoided the extreme zones of the earth, it attacked chiefly young adults, made no distinction of race, but was encouraged by debility and conjunctival irritation, and was contagious. Its prophyllexis must be of a scientific, popular and charitable or legislative character.

Santos Fernandez (Habana) called attention to the immunity of negroes.

Reina (Madrid) said the (East) Indians were rarely attacked.

Zapatero (Madrid) asserted that climate had its influence.

Congenital Cyst of the Orbit with Microphthalmos. La Grange (Bordeaux) said that such a cyst was a diverticulum from the lacrymal apparatus; in this case the eye ball was pushed to one side and its growth prevented—an orbital angioma.

Treatment of Keratitis Suppurativa with Hypopyon by Subconjunctival Injections of Methylene Blue. Mansilla (Madrid) decides that subconjunctival injections of 1.1000 methylene blue are of great service in the above condition, as they stop the pain, overcome sepsis after a few injections, it may be repeated every three or four days; this is preferable to sublimate solution as less painful, or to the cautery as less destructive. Paracentesis must not be neglected, as it also helps the action of the drug. (In infected wounds after cataract the author has had good success by this method.)

Blanco (Madrid) alternates methylene blue injections with sodium chlorid.

Castrasana (Madrid) would like a differentiation between mild and severe cases, before he accepted the above results.

Santos Fernandez (Habana) has had moderate success by subconjunctival injections. He thinks dirty hands are as often accountable for infection as dacryocystitis.

Reina (Madrid) divides corneal ulcers according to infection or non-infection of the tear passages.

Gadaille (Corena) disliked the blue stain of the drug.

Caraet (Barcelona) had used it with success.

La Grange (Bordeaux) preferred the cautery.

Aguilera (Granada) ditto.

Menacho (Barcelona) thought no claim was made for great superiority, only that this method was of service in many cases.

Antonelli (Paris) thought it might help to prevent paracentesis.

Barranque (Barcelona) adhered to paracentesis.

Reclination of Cataract, with Instruments. Alberatti's (Modena) article read by Antonelli expressed the idea that the operation still had its place. His instrument was like a small spoon (curette) introduced through a discission wound.

Menacho (Barcelona) had performed the operation once, with success.

Fat Injections after Enucleation. Barroquer (Barcelona) advocated this method, advising the suturing of antagonistic recti above the socket.

Trichiosis (Total or Partial) Treated by Electrolysis. Burch (Gerona) was enthusiastic for electrolysis on the skin to drag back the cilia distorted inward by cicatrix of conjunctiva or tarsus. His induced scar is in the skin five to ten millimeters from the free edge. He reports five successful cases.

Castrasana (Madrid) still preferred surgical methods.

Epithelioma Epibulbane, with Extension and Cure. Caralt (Barcelona) reported a case in which the X-ray was faulty, but the method of Darier (excision?) stopped the growth.

Blanco (Valencia) explained a *Modification of Placidos Disc to determine corneal irregularities.* The face has a broad line across it—the back a corresponding line the axis of which is indicated on a scale. By revolving the disc the axes may be determined.

Blanco (Valencia) showed his device for restoration of the external canthus—modified from Aaaner. (See Archives de Optalmologia, April, 1903.)

Jequirity in Ophthalmology. Baro (Madrid) prefers the powdered jequirity to any other method.

Vidaur (San Sebastian) restricts its use to the dry stage of corneal opacity.

Menacho (Barcelona) also preferred the powder.

Treatment of Disease of the Lacrymal Passage. May (Madrid) advocated sounds, and advised instruction to patients.

Stereoscopic Binocular Vision. Presas (Madrid) compared the various stereoscopes and the muscular action produced in effecting binocular vision through them.

Orbital Infection of Dental Origin. Gradaille (Coruna) acknowledged the fact of such infection, either by continuity, or by reflex action, or by toxic (blood) influences.

Permanent Catherization of the Lachrymal Passage. Colpas (Gra-

nada) advocated the use of Stilling's knife, three Bowman's sound followed by a silk thread, which is left in for permanent drainage and for its capillary influence in introducing antiseptic medication along the canal. He claims successes by this method.

(The presiding officer, Dr. Albitos, nominated as a committee to investigate the cause of blindness in Spain, Menacho, Reina and Marquez.)

Amaurosis Fugax due to Quinin. Wicherkiewicz (Krakaw) reported a case in a child two years, nine months old, who had taken about two grams of euquinin in three days. There was total blindness, pale disc, narrow arteries. Recovery on cessation of drug, and the use of nitrite of amyl.

Conjunctivitis Granulosa Treated by Expression. Portillo (Valencia) states that expression by the Knapp forceps has found little recognition in Spain, and he wishes to popularize it. He also showed a modified Kuhnt forceps, which he thinks excellent.

Trachoma Epidemic in Buffalo.—News from Buffalo states that trachoma is epidemic in that city. According to the statement of a Marine Hospital official over 100 cases of the disease has been found among the employes of the Lackawanna Steel & Iron Company. It is believed that the disease was brought to Buffalo by foreigners coming by way of Canada.—*American Medicine.*

Ophthalmia Neonatorum.—At a meeting of the Obstetrical Society of London to be held at 20 Hanover Square, W., on Wednesday, July 1st, a discussion on ophthalmia neonatorum will be opened by Dr. Sydney Stephenson, introduced by Dr. W. S. A. Griffith. The honorable secretaries will be glad to hear from any who, not being Fellows of the Society, desire to take part in the discussion.—*British Med. Jour.*

The next annual meeting of the Academy of Ophthalmology and Oto-Laryngology (formerly the Western Ophthalmologic and Oto-Laryngologic Association) will occur in Denver, Colo., in August, 1904, the exact date being Wednesday, Thursday and Friday, August 24, 25, 26, 1904. Dr. Edward Jackson, Denver, Colo., president; Dr. Derrick T. Vail, 4 W. 7th street, Cincinnati, O., secretary.

NOTES AND NEWS.

ITEMS FOR THIS DEPARTMENT SHOULD BE SENT TO
DR. BROWN PUSEY, 31 WASHINGTON ST., CHICAGO.

Dr. R. A. Reeve, of Toronto, will spend the summer in England.

Dr. Frank Allport has been elected clinical professor of ophthalmology and otology in the medical department of Northwestern University, Chicago.

Dr. Thomas McDavitt, of St. Paul, Minn., has been elected secretary of the Minnesota State Medical Society.

Dr. Frank Allport, of Chicago, has been appointed one of the trustees of the Illinois Eye and Ear Infirmary.

Dr. W. L. Ballenger has been elected professor of otology, rhinology and laryngology in the College of Physicians and Surgeons, Chicago.

The Chicago Eye, Ear, Nose & Throat College Hospital has instituted an interneship with service of 18 months, at a recent examination for same, Dr. H. E. Goldberger, P. & S., 1903, was awarded the position.

The American Medical Association resolutions concerning the examination of school children's eyes and ears have been adopted by the following societies: The Southwestern Medical Association, the Delaware State Medical Society, the Montana State Medical Society, the Minnesota State Medical Society, the Michigan State Medical Society.

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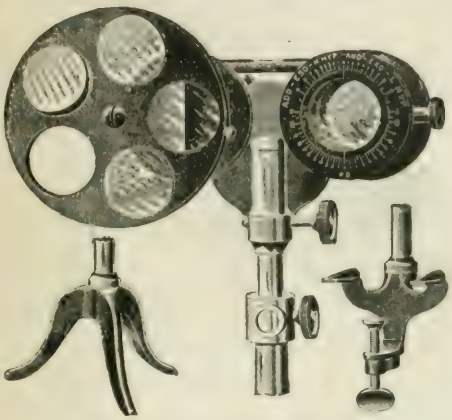

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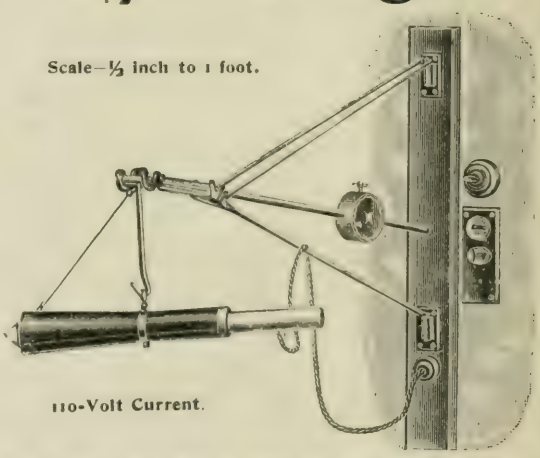

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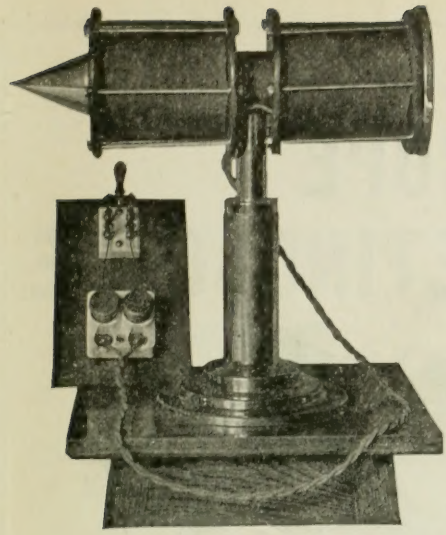

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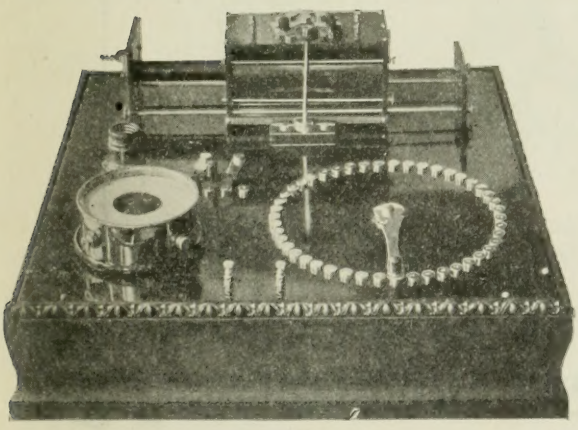

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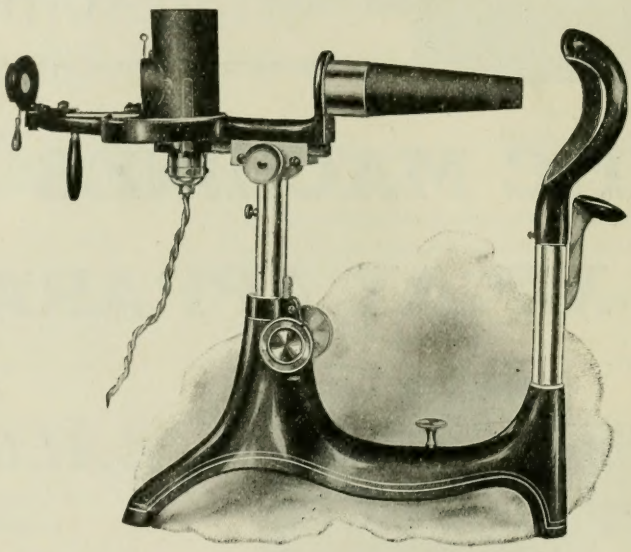

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